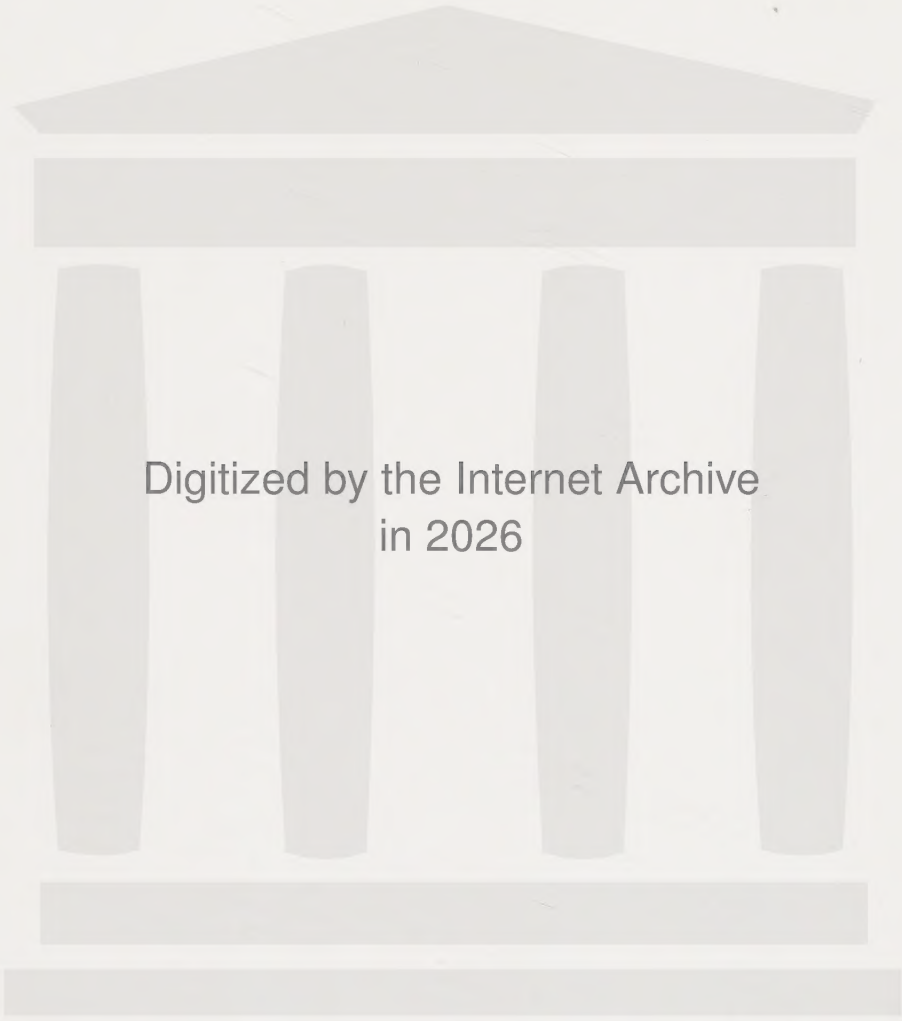
CAVALRY EQUIPMENT 1874

ORDNANCE MEMORANDA NO. 18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ORDNANCE MEMORANDA.

No. 18.

PROCEEDINGS

OF

THE BOARD OF OFFICERS

CONVENED UNDER

SPECIAL ORDERS Nos. 238 AND 253, A. G. O., 1873,

ON

HORSE-EQUIPMENTS, CAVALRY EQUIPMENTS AND ACCOUTERMENTS, SADDLERS' AND SMITHS' TOOLS AND MATERIALS, AND STANDARD SUPPLY-TABLE OF ORDNANCE STORES FOR THE CAVALRY SERVICE;

WITH THE

ACTION OF THE WAR DEPARTMENT THEREON.

WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1874.

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ORDNANCE OFFICE, WAR DEPARTMENT,
October 7, 1873.

SIR:

I have the honor to recommend that a Board of Ordnance and Cavalry Officers be assembled, at some point west of the Mississippi River, to consider what changes, if any, should be made in the "modification of the present horse-equipments," cavalry equipments and accouterments, and saddlers' and blacksmiths' tools and materials for cavalry troops in the field, as now prescribed by General Order No. 60, War Department, Adjutant-General's Office, June 29, 1872, and to recommend a standard table of supply of everything necessary to efficiently provide for the wants of the cavalry service.

If this recommendation is concurred in, it is further recommended that all company commanders of the cavalry be invited to submit their views on the subjects proposed to the Board, and that this office be authorized to submit such information as it may have.

Very respectfully, your obedient servant,

A. B. DYER,
Chief of Ordnance, United States Army.

The Honorable SECRETARY OF WAR.

OFFICE OF THE BOARD ON CAVALRY EQUIPMENTS, ETC.,
Watervliet Arsenal, West Troy, N. Y., May 5, 1874.

SIR:

I have the honor to transmit herewith the proceedings of the Board on Cavalry Equipments, &c.

The appendixes and patterns will be forwarded by express.

Very respectfully, your obedient servant,

I. N. PALMER,
Colonel Second Cavalry, President of the Board.

THE ADJUTANT-GENERAL U. S. A.,
Washington, D. C.

REPORT.

Proceedings of a board of officers convened by virtue of the following orders, viz:

[Special Orders No. 238—Extract.]

WAR DEPARTMENT, ADJUTANT-GENERAL'S OFFICE,
Washington, November 29, 1873.

A Board of Officers, to consist of Col. R. S. Mackenzie, Fourth Cavalry; Capt. J. J. Upham, Sixth Cavalry; Capt. A. Mordecai, Ordnance Department; Capt. Guy V. Henry, Third Cavalry; Capt. L. H. Carpenter, Tenth Cavalry, will assemble at Fort Riley, Kansas, on the 6th day of January, 1874, or as soon thereafter as practicable, to consider and report the changes, if any, that should be made in the horse-equipments, cavalry equipments and accouterments, and saddlers' and blacksmiths' tools and materials for the cavalry service, (reference being made to General Orders No. 60, of June 29, 1872, from this Office,) and to recommend a standard supply-table of the kind and quantities of ordnance stores necessary to efficiently provide a cavalry company in garrison and field.

The Chief of Ordnance is authorized to submit such information as he may have upon the subject and the Board is authorized to call for such further information from cavalry officers as may be desirable.

The junior member of the Board will record the proceedings.

* * * * * * *

By order of the Secretary of War:

E. D. TOWNSEND,
Adjutant-General.

[Special Orders No. 253—Extract.]

WAR DEPARTMENT, ADJUTANT-GENERAL'S OFFICE,
Washington, December 24, 1873.

* * * * * * *

II. The Board of Officers appointed by paragraph 7, Special Orders No. 238, November 29, 1873, from this Office, to consider and report the changes, if any, that should be made in equipments and accouterments, &c., for the cavalry service, and to recommend a standard supply-table of ordnance stores to provide a cavalry company, will assemble on the 6th day of January, 1874, the date fixed in the order appointing the Board, or as soon thereafter as practicable, at Fort Leavenworth, instead of Fort Riley, Kansas.

Col. R. S. Mackenzie, Fourth Cavalry, is relieved as a member of the Board, and Col. Innis N. Palmer, Second Cavalry, detailed in his stead.

* * * * * * *

By order of the Secretary of War:

E. D. TOWNSEND,
Adjutant-General.

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FORT LEAVENWORTH, KANSAS,
JANUARY 8, 1874—10 a. m.

The Board met pursuant to the foregoing orders.

Present, all the members. The orders convening the Board were read.

The board then adjourned to meet January 10, at 10 a. m.

JANUARY 10, 1874—10 a. m.

The Board met pursuant to adjournment. Present, all the members.

Papers, &c., submitted.

A communication from the Chief of Ordnance was read, transmitting patterns and papers as follows:

Communications from officers upon the sufficiency of the supply-table of blacksmiths' and saddlers' tools and materials, as issued under General Orders No. 60, War Department, series of 1872, received from the field at the Ordnance Office, (8 papers.) The substance of these papers is contained in a paper hereto appended and marked Abstract A.

Communications from officers upon miscellaneous subjects referred to the Ordnance Office, (5 papers.) A summary of the contents of these papers is contained in a paper appended to the proceedings of the Board, and marked Abstract B.

Guard-book, containing all reports from the field received at the Ordnance Office on the trial of cavalry equipments. These are contained in a paper hereto appended and marked Abstract C.

Guard-book, containing reports from the field from cavalry companies which were supplied with experimental cartridge-boxes in 1871. The substance of these reports is embraced in a paper hereto appended and marked Abstract D.

Three samples of cavalry officers' sabers prepared at the National Armory, received from Ordnance Office.

Samples of the experimental cartridge-boxes which were issued to certain cavalry companies in 1871, submitted by the commanding officer of the Leavenworth Arsenal, in accordance with directions from the Chief of Ordnance. A list is hereto appended and marked Appendix I.

A cartridge-box invented by Lieut. S. McKeever, received from the Ordnance Office.

Patterns of equipments and accouterments as furnished by the Ord-

nance Department, and samples of the six months' supply of tools and stores for a cavalry company in the field, &c., were submitted by the commanding officer of the Leavenworth Arsenal, in accordance with instructions from the Chief of Ordnance. A list is hereto appended and marked Appendix II.

The receipt of the papers and patterns received from the Ordnance Office were acknowledged.

Capt. Guy V. Henry, Third Cavalry, a member of the Board, submitted a pattern of the picket-pin invented by William Lyon, of Fort McPherson, Nebraska, and also a communication from Lieut. A. D. B. Smead, Third Cavalry, upon the subject of equipments and accouterments.

Captain Henry also submitted a communication from Capt. G. Russell, Third Cavalry, upon the same subject.

Colonel Palmer, Second Cavalry, the President of the Board, submitted communications from the following officers upon the supply-table of tools and materials:

1. Capt. D. S. Gordon, Second Cavalry, appended to abstract, and marked No. 3, Abstract F.

2. Capt. H. E. Noyes, Second Cavalry, appended to abstract, and marked No. 2, Abstract F.

3. Capt. E. R. Wells, Second Cavalry, appended to abstract, and marked No. 4, Abstract F.

4. Lieut. J. N. Wheelan, Second Cavalry, appended to abstract, and marked No. 5, Abstract F.

5. Capt. E. J. Spaulding, Second Cavalry, appended to abstract, and marked No. 6, Abstract F.

The substance of these papers is contained in Abstract F, hereto appended.

All the above papers were read and consideration thereon deferred.

PRELIMINARY CONSIDERATION OF EQUIPMENTS AND ACCOUTERMENTS.

The Board adopted the following resolution:

That the Board proceed to a preliminary examination and discussion of each of the articles of equipments and accouterments, in their proper order, before finally adopting any pattern, to the end that patterns of any article may be made which may appear to be desirable, and that the Board may

Preliminary consideration of equipments and accouterments.

determine whether it will be necessary to ask any further information from cavalry officers.

Meetings of Board.

The Board resolved that it would assemble each day at 10 a. m., with the exception of Sundays. The Board then adjourned.

JANUARY 12, 1874—10 a. m.

The Board met pursuant to adjournment. Present, all the members.

A communication from First Lieut. George H. Palmer, Sixteenth Infantry, was received and read, with inclosures consisting of a pamphlet and photograph, descriptive of his "Cavalry Carrying Braces." Consideration upon this was deferred.

In accordance with its resolution the Board commenced the preliminary consideration of the equipments and accouterments, by taking up the

SADDLE COMPLETE.

Saddle complete.

The following points were discussed:

1. The proper sizes that should be issued, and the proper width of the pommel-arc.

2. Whether the tree should be covered with raw-hide under the black leather, in order to give greater strength, and to save the wear consequent upon an irregular surface.

3. As to the advisability of dispensing with sweat-leathers and skirts.

4. As to the strength of the pommel-plates. In many old saddle-trees submitted to the board by the commanding officer of Leavenworth Arsenal, the pommel-plates were broken.

5. The bars; their projection front and rear, and their curve. A decided difference was found to exist upon these points in the trees examined.

6. The proper shape of the stirrup-loops. No uniformity existed in many examined, but in cases where the stirrup-straps hang correctly the loops were rectangular.

7. Concerning the "D"-ring safe. Whether it is not necessary to have the safe made longer, in order to prevent side-sores on horses.

8. The stirrup, and the proper length of the hood to prevent the foot from pushing underneath.

9. As to the proper shape of the saddle-bags, their capacity, and the manner in which they should be secured.

10. The material that the girth should be made of, and whether the cincha should be adopted.

11. The shape of the bars of the saddle-tree in relation to the bearing-surface. Many of the trees received from contractors, and now on hand, differ so widely from the original model, that but few points in the entire length of the bars can rest upon the horse's back.

12. The proper width of the bars was considered.

13. Whether the brass ovals should be fastened with four screw-pins instead of two; each screw-pin to be of a size to be determined, say five-eighths inch.

14. The carbine-socket; whether it should be attached to the "D"-ring or higher up.

The Board resolved that the commanding officer of Leavenworth Arsenal be requested to make, after patterns suggested—

One set of leather saddle-bags.

One cincha, with fastenings complete.

THE CURB-BRIDLE.

Upon this subject the following points were discussed : Curb-bridle.

1. Whether the present pattern of curb-bit is not unnecessarily heavy, and whether the requirements of the service do not demand the adoption of a new pattern in which this objection will be remedied.

2. As to the advisability of placing a loop on the branches of the curb-bit, opposite the mouth-piece, so that the reins can be shifted if necessary.

3. Whether the reins of the bridle should be furnished with buckles, instead of being sewed to the rings of the curb-bit, and the proper width of the reins.

4. Whether two or one buckles should be placed on the cheek-piece of the head-stall.

5. Whether two or one buckles should be placed on the throat-lash.

6. Whether the broad band of the bridle should be made to slide or not.

7. Whether the curb-chain or curb-strap should be adopted.

A resolution was agreed to, requesting the commanding officer of Leavenworth Arsenal to make the following articles, after patterns suggested—

One curb-bit.

One bridle, cavalry, with alterations.

The Board then adjourned.

JANUARY 13, 1874—10 a. m.

The Board met pursuant to adjournment. Present, all the members.

A communication from Capt John Mix, Second Cavalry, was received, stating his opinions upon the equipments and accouterments for cavalry, and inclosing a list of materials recommended by him. A reply was written to Captain Mix, acknowledging the receipt of his communication.

THE LYON PICKET-PIN.

Lyon's picket-pin.

A letter was received from William Lyon, of Fort McPherson, describing his patent picket-pin, and inclosing indorsements from Captain Russell, Captain Curtis, and Lieutenant King, Third Cavalry, recommending its adoption. A pattern of the pin, forwarded by Mr. Lyon, was received.

Consideration upon the matter was deferred.

A reply was written to Mr. Lyon, acknowledging the receipt of these papers and the pattern.

THE HALTER AND STRAP.

Halter and strap.

The Board then proceeded to the consideration of the halter and strap, and the following points were discussed:

1. Whether it would be advisable to furnish a halter-chain, in addition to the halter-strap, for garrison use, in order to save a large expenditrue of leather; the chain to be made as light as possible, not to exceed one pound in weight, to be furnished with a bar at one end, and two rings at proper distances, and a strongly made snap upon the other end. The chain to be about No. $\frac{1}{0}$ German twist link, bright.

2. In regard to the halter: whether the pattern now used in artillery would be suitable for cavalry, it being desirable to obtain uniformity if possible.

3. Whether the buckles should be japanned or blued.

THE WATERING-BRIDLE.

Watering-bridle.

Whether the watering-bit should not be strengthened at the joint, as a number of condemned bits, presented for the inspection of the Board, were broken at this point.

HORSE-BRUSH.

Horse-brush.

The merits of the flexible back were discussed

THE LINK.

1. The proper strength of the snap was considered. Link.

2. Whether the $\frac{3}{4}$-inch bar-buckle should not be substituted for the horse-shoe buckle now in use.

THE LARIAT.

As to the material which would give in its qualities the necessary strength and durability required. Lariat

The merits of the horse-hair lariat were discussed, especially upon the question of economy.

A resolution was adopted requesting the commanding officer of Leavenworth Arsenal, to furnish the Board with the following articles, after patterns suggested—

One halter-chain.

One horse-hair lariat.

The Board then adjourned.

JANUARY 14, 1874—10 a. m.

The Board met pursuant to adjournment. Present, all the members.

The Board continued the consideration of the horse-equipments.

THE PICKET-PIN.

The following points were discussed: Picket-pin.

1. Whether it would be advisable to change the present pattern in its length and cross-section.

2. The merits of the Lyon picket-pin were considered.

3. A pattern was suggested with a swivel attached to the loop at the head.

A resolution was adopted, "that, as the order convening the Board requires that reference be made to General Orders No. 60, War Department, series of 1872, which designates certain modifications in the equipments issued to the cavalry, the Chief of Ordnance be requested to furnish any information in his possession upon the subject." Information from the Chief of Ordnance requested.

A telegram was sent to the Ordnance Office asking for this information; also for any obtainable in regard to nickel-plated bits and felt saddle-cloths.

THE NOSE-BAG.

Nose-bag.

The Board discussed the question of the nose-bag upon the following points:

1. Whether it should not be retained.

2. Whether the saddle-cloth, for feeding purposes, prescribed by General Orders No. 60, War Department, series of 1872, would be required if the nose-bag is furnished.

3. Assuming that the nose-bag is to be issued, whether it would not be necessary to modify the old pattern, so as to obtain some ventilation, and thus obviate the chief objection urged against it. Perforated metal plates, or perforated leather straps, sewed to the side, were suggested.

THE SADDLE-BLANKET.

Saddle-blanket.

Upon this the following were considered:

1. As to the best material, the present being too thin and light.

2. The proper size.

THE FELT SADDLE-CLOTH.

Felt saddle-cloth.

The merits of the felt saddle-cloth were discussed, and whether it would be advisable to issue it, in addition to the saddle-blanket, as a part of the horse-equipments.

THE SPURS AND STRAPS.

Spurs and straps.

Concerning the spurs and straps: whether it would not be desirable to make the strap $\frac{5}{8}$-inch wide with a bar-buckle.

THE FORAGE-SACK.

Forage-sack.

Whether or not the forage-sack should be narrowed at the opening, to facilitate closing the bag.

THE BRUSH AND SHOE POUCH.

Brush and shoe pouch.

As to the advisability of dispensing with the brush and shoe pouch, issued under General Orders No. 60, War Department, series of 1872, and making other provisions for carrying the brushes and horse-shoes.

THE TIN CUP.

Tin cup.

The expediency of furnishing a block-tin cup, to hold one quart, was considered.

A resolution was adopted requesting the commanding officer of Leaven-

worth Arsenal to make, for the use of the Board, the following articles, after patterns suggested:

One nose-bag.
One spur-strap, (pair of.)
One forage-sack.
One tin cup.
One picket-pin.
One link, cavalry.

The Board then adjourned.

JANUARY 15, 1874—10 a. m.

The Board met pursuant to adjournment. Present, all the members.

A communication from Col. J. J. Reynolds, Third Cavalry, was received, recommending the Lyon picket-pin. A reply was sent, acknowledging the receipt of this letter.

A communication from Maj. Lewis Merrill, Seventh Cavalry, was received, describing certain improvements in lariats, side-lines, and curry-combs made by him. The paper was read and filed.

A telegram was received from the Ordnance Office, stating that no reports had been received on the subject of the new modifications in equipments, issued under General Orders No. 60, War Department, series 1872, and that the reports on nickel-plated bits and felt saddle-cloths had been mailed.

A letter was sent to the commanding officer at Fort Hays, Kansas, requesting information upon the durability of linen-web girths, issued to companies of cavalry at his post.

THE SIDE-LINE.

Side-line.

1. The proper length of the chains, the different sizes, and the proportion of each.

2. Whether it would not be well to supply the chain with open links, or with some arrangement to permit of lengthening or shortening at pleasure.

A number of patterns submitted by the commanding officer of Leavenworth Arsenal, and a model furnished by Col. Nelson A. Miles, Fifth Infantry, were examined.

IRON PINS.

Iron picket-pin.

The advisability of furnishing the following was considered: Iron

pins to secure the picket-line, in the field or on scouts, 3 feet in length and $1\frac{1}{2}$ inches in diameter. To be furnished with a strong ring, 4 inches in diameter, passing through the pin about $2\frac{1}{2}$ inches below the top of the head.

CANTEENS.

Canteen.

It was discussed as to whether the canteen should be covered with two thicknesses, and felt was suggested as a good material.

A resolution was adopted requesting the commanding officer of Leavenworth Arsenal to make for the use of the Board the following articles, after description furnished:

One side-line.

One iron pin.

One canteen, with two coverings.

The Board then adjourned.

JANUARY 16, 1874—10 a. m.

The Board met pursuant to adjournment. Present, all the members.

A communication was received from Capt. A. E. Bates, Second Cavalry, giving his views upon cavalry equipments and accouterments.

A reply was sent to Captain Bates, acknowledging the receipt of his communication.

A pattern of Lieut. George H. Palmer's "Cavalry Carrying-Braces" was received and examined.

A letter was written to Lieutenant Palmer, acknowledging the receipt of his patterns and the papers describing it.

The board proceeded to the consideration of cavalry accouterments upon the following points:

THE BRACES, EXPERIMENTAL.

Brace system of cavalry equipments.

This system was carefully considered by the Board, and the reports upon the subject received from the Ordnance Office were examined.

The great weight of testimony was found to be against the use of the braces for the mounted soldier, as it incommoded him and is irksome.

THE SABER-BELT AND PLATE.

Saber-belt and plate.

1. As to the plate best adapted for the service.
2. Should the saber-slings be attached to the belt at two points or one;

if at two points, whether the slings should be secured by a hook or otherwise.

It was suggested that both slings could be joined together and attached to the belt at one point with a strong brass hook, or by the Stuart's attachment.

It was proposed to furnish the belt with brass slides, so that they can be shifted or removed. The proper manner of placing a hook for hooking up the saber was considered.

THE SABER-KNOT.

Saber-knot.

No improvement in the saber-knot was suggested, except that it should be made strong and light, the strap to be say $\frac{5}{8}$ inch wide, with two loops.

THE PISTOL-HOLSTER.

Pistol-holster.

The following suggestions received consideration:

1. That the holster be made to fit the pistol now in use better than the pattern in service, and that the flaps be made smaller.

2. The substitution of a strap for the flap, in view of the adoption of metallic ammunition.

3. To retain the swivel attachment on the pistol-holster issued with the cavalry equipments, (experimental,) with a movement of $\frac{1}{4}$ circle instead of the circle, to prevent the holster from swinging entirely around.

CARBINE SLING AND SWIVEL.

Carbine sling and swivel.

Whether it would not be advisable to adopt the old pattern of the separate wide sling, as the papers before the Board show a large majority of the officers of cavalry decidedly in favor of this.

CARTRIDGE BOXES AND POUCHES.

Cartridge boxes and pouches.

Samples of the experimental cartridge-boxes issued by the Ordnance Department to certain cavalry companies in 1871 were examined by the Board, and other patterns submitted by the commanding officer of Leavenworth Arsenal.

A pattern was suggested similar to the pouch issued with the cavalry equipments, (experimental,) to carry 50 carbine-cartridges, with flaps to prevent the loss of ammunition; and one of the same pattern, to carry 20 rounds, for pistol-ammunition.

THE SCOUTING-BELT.

Scouting-belt.

The merits of the scouting-belt were discussed, and as to whether or not it would be advisable to recommend the adoption of a plain belt, with loops for 40 cartridges, to be issued when called for.

A resolution was adopted requesting the commanding officer of Leavenworth Arsenal to make the following articles, after patterns described:

One pouch for carbine-ammunition, with sling.

One pouch for pistol-ammunition.

One pistol-holster, with attachment.

One saber-knot.

One set saber-slings.

One belt, with movable slide.

The Board then adjourned.

JANUARY 17, 1874—10 a. m.

The Board met pursuant to adjournment. Present, all the members.

BLACKSMITHS' AND SADDLERS' TOOLS.

Blacksmiths' and saddlers' tools.

The Board proceeded to the consideration of blacksmiths' and saddlers' tools and materials as issued under General Orders No. 60, War Department, series of 1872. The papers referred to the Board upon this subject by the Ordnance Department, and contained in Abstract A, hereto appended, were read.

Samples of the tools and materials now issued by the Ordnance Department were submitted by the commanding officer of Leavenworth Arsenal, and examined by the board.

A communication was received from Capt. S. M. Whitside, Sixth Cavalry, stating his opinion and recommendation upon cavalry equipments and accouterments.

A reply was written to Captain Whitside, acknowledging the receipt of his communication.

The patterns of side-lines, lariats, and curry-comb forwarded by Major Merrill, Seventh Cavalry, were received and examined.

A letter was written to Major Merrill, acknowledging the receipt of these articles, and the papers describing them.

A communication from Capt. Lewis Thompson, Second Cavalry, upon the supply-table of tools and materials, was submitted by Col. I. N. Palmer, Second Cavalry, the President of the Board.

A communication from Capt. John A. Irwin, Sixth Cavalry, upon cavalry equipments and accouterments, was submitted by Col. I. N. Palmer, Second Cavalry, the President of the Board.

Both of these papers were read and filed.

The Board then adjourned.

JANUARY 19, 1874—10 a. m.

The Board met pursuant to adjournment. Present, all the members.

The Board resumed the consideration of the blacksmiths' and saddlers' tools and materials upon the following points:

1. As to the quality of the tools now issued.

CAVALRY-FORGE.

Cavalry-forge.

1. Whether the mountain-howitzer forge and tools issued under General Orders No. 60 War Department, series of 1872, is adapted to the cavalry service, the bellows, fire-box, and tools being very small.

2. Whether it would not be advisable to furnish a forge and tools of larger size, to be carried, with the material, in a two-wheeled vehicle made for the purpose.

HORSESHOES AND HORSESHOE-NAILS.

Horseshoes and horseshoe-nails.

The different kinds submitted by the commanding officer of Leavenworth Arsenal were examined and their merits discussed.

A communication was received from the Chief of Ordnance, dated January 15, 1874, stating that no complete sets of horse equipments, as prescribed by General Orders No. 60, War Department, series 1872, have yet been issued, and transmitting the following:

Nickel-plated bits and felt saddle-cloths.

1. Curb-bit, of the pattern issued in 1871, nickel-plated.

2. Reports from the commanding officer sof Companies L and K, Sixth Cavalry, upon nickel-plated bits, and a report from the National Armory upon the same subject.

3. Reports from the field during the war upon the felt saddle-cloth.

The substance of the reports upon nickel-plated bits and felt saddle-cloths is contained in a paper hereto appended, and marked Abstract E.

A reply was written to the Chief of Ordnance, acknowledging the receipt of these papers and patterns.

CIRCULAR LETTER.

Circular letter to cavalry officers.

A resolution was adopted by the Board, "that a circular be addressed to field officers and commanding officers of companies of cavalry, in which certain questions should be asked, in order to obtain information as to the views of cavalry officers upon points suggested to the Board in its preliminary examination of the matter before it."

A resolution was adopted requesting the commanding officer of Leavenworth Arsenal to make, after a pattern described, the following:

A two-wheeled vehicle, constructed to carry the blacksmiths' and saddlers' tools and materials, and forge and bellows complete.

The Board then adjourned.

JANUARY 20, 1874—10 a. m.

The Board met pursuant to adjournment. Present, all the members.

The Board resumed the discussion upon the

SUPPLY-TABLE OF MATERIALS.

Supply-table of materials.

The relative merits of neat's-foot oil and Collins's prepared harness oil, as preservatives for leather, were considered. Upon motion it was decided that the opinion of cavalry officers should be asked upon this point, and a question to this effect was added in the circular.

Circular letters to cavalry officers.

The recorder submitted the circular drawn up in accordance with the resolution of the Board, and, upon examination, it was adopted, and copies directed to be forwarded without delay.

The circular letter was as follows:

OFFICE OF THE BOARD ON CAVALRY EQUIPMENTS,
Fort Leavenworth, Kansas, January 20, 1874.

SIR: The Board convened by Special Orders Nos. 238 and 253, series of 1873, from the War Department, to consider the subject of cavalry accouterments and equipments, &c., desire the following information, and in accordance with authority granted by the War Department request that you will return this with the questions answered without delay.

By direction of the Board:

L. H. CARPENTER,
Captain Tenth Cavalry, Brevet Colonel, Recorder.

1. Question. Do you find saddles now issued to be made too narrow for the withers of large horses? If so, what increase in width is necessary, and what percentage should be made of the increased size?

Answer.

2. Question. Do you think any protection required for the soldier, in the way of sweat-leathers or saddle-skirts?

Answer.

3. Question. Would you prefer the hair girth, or cincha, to linen webbing or the present girth?

Answer.

4. Question. Would you prefer the cincha strap fastening instead of the buckle fastening now in use?

Answer.

5. Question. Would you prefer a leather or a canvas saddle-bag?

Answer.

6. Question. Can you recommend a curb-bit for cavalry better than the one now in use, or any changes therein?

Answer.

7. Question. Do you desire a light halter-chain in addition to the leather halter-strap, for use in garrison or elsewhere?

Answer.

8. Question. Can you recommend any change in the curry-comb?

Answer.

9. Question. Can you recommend any change in the horse-brush?

Answer.

10. Question. Can you recommend any change in the lariat? One made of horse-hair is proposed.

Answer.

11. Question. Can you suggest any change in the picket-pin?

Answer.

12. Question. Do you think it desirable to issue a dark-blue felt saddle-cloth in addition to the saddle-blanket now issued?

Answer.

13. Question. What suggestions have you to make in regard to side-lines, especially as to the length of chains?

Answer.

14. Question. It is proposed to furnish iron pins three feet long, with rings at top, in order to fasten the picket-line close to the ground while in the field. Would this be desirable?

Answer.

15. Question. Should the saber-slings be attached to the belt by two straps at one point, after the plan of Stuart's attachment, or from two separate points as heretofore?

Answer.

16. Question. Can you suggest any changes in the present pistol-holster? Since the adoption of metallic ammunition is the flap necessary, or can a strap be substituted?

Answer.

17. Question. Do you desire to make any suggestions in regard to the carrying of carbine or of pistol ammunition in garrison or in field?

Answer.

18. Question. What is your opinion of the mountain-howitzer forge now issued under General Orders No. 60, War Department, June 29, 1872?

Answer.

19. Question. It is proposed to carry the portable forge, tools, and material for the blacksmith and saddler in a two-wheeled vehicle made for the purpose. Do you think this desirable or not?

Answer.

20. Question. What manufacture of horseshoes do you prefer?

Answer.

21. Question. What manufacture of horseshoe-nails do you prefer?

Answer.

22. Question. What sizes of horseshoes should be issued and what proportion of each size, and what amount for a six months' supply?

Answer.

23. Question. What additions or changes do you propose, in kind and amount, in the saddlers' tools as now issued?

Answer.

24. Question. What additions or changes do you propose, in kind or amount, in the blacksmiths' tools as now issued?

Answer.

25. Question. If the saddlers' horse is adopted for use in garrison, can the separate clamp be dispensed with?

Answer.

26. Question. What additions or changes do you propose in the saddlers' material as now issued for a six months' supply?

Answer.

27. Question. Is the quantity of horseshoe-nails, as now issued, sufficient for a six months' supply?

Answer.

28. Question. Have you tried the Collins' prepared harness oil? If so, do you prefer it to neat's-foot oil?

Answer.

29. Make any general suggestions that you may desire.

The Board considered the time that should be allowed to hear from the cavalry officers written to, and to have the necessary patterns made, and the necessity for an adjournment during that time was decided upon.

Clerk to the board.

By direction of the Board a telegram was sent to the Chief of Ordnance, asking whether the commanding officer of Leavenworth Arsenal was authorized to furnish a clerk for the use of the Board.

ADJOURNMENT UNTIL FEBRUARY 20, 1874.

Adjournment to February 20, 1874.

A resolution was adopted "that when the Board adjourned it will be adjourned until February 20, 1874, in order to give the time required for the construction of patterns, and to obtain information from cavalry officers at remote stations."

Preparation of samples, &c., at Watervliet arsenal.

A communication was directed to be sent to the Adjutant-General, United States Army, explaining the reasons for the adjournment of the Board until February 20, 1874, and requesting authority to call upon the commanding officer of the Watervliet Arsenal, New York, for the manufacture of certain samples and patterns, and information desired by the Board.

In the event of obtaining the authority asked for in the above letter, the recorder was directed to correspond with the commanding officer of the Watervliet Arsenal, and request the manufacture of the patterns, and call for the information required.

Nickel-plated bits.

The recorder was directed to request information upon nickle-plated bits from the commanding officer of Springfield Armory, and to ask the

Gauges for saddle-trees.

Chief of Ordnance to furnish, for the use of the Board, a set of standard gauges for the saddle-tree.

During the adjournment of the Board the recorder was directed to receive all official communications, and to carry on any correspondence that might be necessary, the whole to be submitted to the Board.

The Board then adjourned.

FEBRUARY 20, 1874—10 a. m.

The Board met pursuant to adjournment.

Present: 1. Col. Innis N. Palmer, Second Cavalry; 2. Capt. J. J. Upham, Sixth Cavalry; 3. Capt. A. Mordecai, Ordnance Department; 4. Capt. L. H. Carpenter, Tenth Cavalry.

Absent: 1. Capt. Guy V. Henry, Third Cavalry.

A communication from Capt. Guy V. Henry, Third Cavalry, dated February 12, 1874, was read, stating that he was under medical treatment, and therefore would be prevented from being present at the meeting of the Board. Filed as a part of the record.

A letter was written to the Adjutant-General of the Army, informing him of the absence of Capt. Guy V. Henry, and the cause.

The Board then adjourned.

FEBRUARY 21, 1874—10 a. m.

The Board met pursuant to adjournment.

Present: 1. Col. Innis N. Palmer, Second Cavalry; 2. Capt. J. J. Upham, Sixth Cavalry; 3. Capt. A. Mordecai, Ordnance Department; 4. Capt. L. H. Carpenter, Tenth Cavalry.

Absent: 1. Capt. Guy V. Henry, Third Cavalry.

The following papers were submitted to the Board:

Papers, &c., submitted.

1. Copy of a letter from Capt. J. G. Trimble, First Cavalry, dated January 10, 1874, to the Chief of Ordnance, United States Army, referred to the Board by the Chief of Ordnance, containing criticisms on the "new cavalry equipments," and especially recommending the belt with loops for cartridges for field service.

2. Communication from the Ordnance Office, dated January 22, 1874, confirming telegram of same date, authorizing the commanding officer of Leavenworth Arsenal to furnish a clerk for the use of the Board.

3. Letter from Major N. B. Sweitzer, Second Cavalry, dated January 23, 1874, stating his views upon the equipments and accouterments, and inclosing communications upon the same subject from Capt. Lewis Thompson, Second Cavalry, and Capt. George L. Tyler, Second Cavalry.

4. Copy of instructions from the Chief of Ordnance to the commanding officer of Watervliet Arsenal, dated January 27, 1874, directing him to prepare

such samples and furnish such information as may be desired by the Board on Cavalry Equipments. Furnished for the information of the Board by the Chief of Ordnance.

5. Copy of letter to the commanding officer of the National Armory, Springfield, Mass., dated January 28, 1874, requesting information upon the subject of nickel-plating, any changes or improvements that may have been made in the process, the probable cost of plating bits, &c.

6. Copy of letter written to Capt. C. B. McLellan, Sixth Cavalry, dated January 28, 1874, requesting him to furnish the Board with a sample of the picket-pin invented by his first sergeant.

7. Communication from Capt. John Mix, Second Cavalry, dated January 30, 1874, recommending that the leather parts of the horse-equipments be issued separately when called for by company commanders.

8. Communication from the Adjutant General, United States Army, Washington, D. C., dated January 30, 1874, stating that the commanding officer of Watervliet Arsenal was instructed to prepare such samples and furnish such information as might be desired by the board.

9. Copy of letter written to Col. B. H. Grierson, Tenth Cavalry, dated January 31, 1874, requesting him to furnish to the Board samples of the horseshoe invented by Mr. Kiernan, chief farrier of the Cavalry Depot, Saint Louis, Mo., and samples of the clinching-tongs and curb-bit of spring-steel recommended by him, together with such reports and information in regard to these articles as might be obtainable.

10. Copy of letter written to the commanding officer of Watervliet Arsenal, New York, dated January 31, 1874, requesting him to prepare samples of articles mentioned therein for the use of the Board, descriptions to be furnished by the commanding officer of Leavenworth Arsenal.

11. Letter from Capt. Henry E. Noyes, Second Cavalry, submitting patterns of lariat, picket-pin, and pistol-holster; dated February 2, 1874.

12. Communication from Maj. J. G. Benton, Ordnance Department, commanding National Armory, Springfield, Mass., dated February 4, 1874, giving information upon the subject of nickel-plating.

13. Communication from the Chief of Ordnance, United States Army, dated February 5, 1874, submitting the following patterns for the consideration of the Board:

One feed-bag, presented by the American Horse-Feeder Company, Boston, Mass.

Three bridles, submitted by James H. Wilson, Nashville, Tenn.

One side-line.

One G. W. Barnes's pulley bridle-bit.

One watering-bridle.

One bridle.

One Homes's belly-band fastener.

14. Recommendations from officers of the First Cavalry upon the supply-table of tools and materials, forwarded by Col. Alvan C. Gillem, First Cavalry, to the Chief of Ordnance, and referred from the Ordnance Office to the Board on Cavalry Equipments, in an indorsement dated February 6, 1874. The substance of these recommendations is contained in a paper attached to these proceedings and marked Abstract F.

15. Letter from Capt. A. Mordecai, Ordnance Department, commanding Leavenworth Arsenal, dated February 10, 1874, submitting one of Wait's patent feed-bags and two side-lines for the examination of the Board.

16. Copy of communication written to the Chief of Ordnance, dated February 11, 1874, acknowledging the receipt of a letter from the Ordnance Office, dated February 6, 1874, and of the patterns mentioned therein.

17. Copy of Special Orders No. 27, War Department, Adjutant-General's Office, February 9, 1874, directing Col. Innis N. Palmer, Second Cavalry, the President of the Board, to visit Watervliet Arsenal, New York, on business relating to the manufacture of articles for the use of the Board, and upon completing this to return to Fort Leavenworth, Kansas.

18. A communication from the Chief of Ordnance, dated February 9, 1874, stating that many complaints have been made to the Ordnance Office in relation to the quality of horseshoes, horseshoe-nails, and blacksmiths' and farriers' tools now issued, and inviting the attention of the Board to the matter.

19. Copy of a letter written to the Chief of Ordnance, dated February 11, 1874, requesting to be furnished with a set of standard gauges for the saddle-tree, for the use of the Board.

20. A communication from Capt. Wm. R. Shoemaker, M. S. K. O., dated February 12, 1874, acknowledging the receipt of the circular letter of the board, and stating that he agrees with the opinions of Capt.

William McCleave, Eighth Cavalry, and submits model of a new cavalry-bit.

21. A letter from Capt. A. Mordecai, Ordnance Department, commanding Leavenworth Arsenal, dated February 17, 1874, transmitting list of stores and papers submitted by him to the Board on Cavalry Equipments, stated as follows:

1. A list of ordnance stores laid before the board January 10, 1874, in accordance with instructions from the Chief of Ordnance, dated December 16, 1873.

2. A list of experimental cartridge-boxes laid before the board January 10, 1874.

3. Copy of a letter from Capt. A. Mordecai, Ordnance Department, commanding Leavenworth Arsenal, to the commanding officer of Watervliet Arsenal, New York, dated January 31, 1874, giving a list of the articles sent to aid in making samples desired by the Board.

4. Copy of detailed instructions sent by Capt. A. Mordecai, Ordnance Department, commanding Leavenworth Arsenal, to the commanding officer of Watervliet Arsenal, of samples desired by the Board to be fabricated at that Arsenal.

5. Copy of letter from Capt. A. Mordecai, Ordnance Department, commanding Leavenworth Arsenal, dated February 2, 1874, transmitting the above detailed instructions.

6. Copy of letter received by Capt. A. Mordecai, Ordnance Department, commanding Leavenworth Arsenal, from the commanding officer of the National Armory, Springfield, Mass., dated February 4, 1874, giving the kind and amount of materials best suited for cleaning small-arms and brasswork.

22. A letter from Capt. C. B. McLellan, Sixth Cavalry, dated February 12, 1874, inclosing model of a picket-pin for the consideration of the Board.

23. A letter from Capt. A. Mordecai, Ordnance Department, commanding Leavenworth Arsenal, dated February 18, 1874, transmitting a list of articles submitted for the examination of the Board, with the price of each stated.

24. Copy of a letter written to the commanding officer of Watervliet Arsenal, New York, February 15, 1874, requesting certain patterns made in addition to those asked for in a previous communication.

25. Letter from Major Merrill, Seventh Cavalry, dated February 21, 1874, describing a pattern of curry-comb submitted by him.

All of the foregoing papers were read and filed.

The following articles were examined by the Board:

1. A drawing of the Kiernan horseshoe, from Col. B. H. Grierson, Tenth Cavalry.

2. Model for sweat-leathers, from Captain Spaulding, Second Cavalry.

3. Drawing for curb-bit, from Captain Spaulding, Second Cavalry.

4. Pattern of picket-pin, from Captain Spaulding, Second Cavalry.

5. Belt, with loops for cartridges, from Captain Bernard, First Cavalry.

6. Drawing of curb-bit, from Major Du Bois, Third Cavalry.

7. Model of curb-bit, from Capt. W. R. Shoemaker, M. S. K. O.

8. Model of picket-pin, from Capt. C. B. McLellan, Sixth Cavalry.

9. Patterns for curb-bit, lariat, picket-pin, and pistol-holster, from Capt. Henry E. Noyes, Second Cavalry.

Articles submitted by Capt. A. Mordecai, Ordnance Department, commanding Leavenworth Arsenal, as follows:

One felt saddle-cloth, gray, bound yellow.

One felt saddle-cloth, blue, bound yellow

One felt saddle-cloth, gray.

One felt saddle-cloth, blue.

One horse-brush, No. 101.

One horse-brush, No. 401.

One curry-comb, No. 18.

One curry-comb, No. 480

Two hair cinchas.

Four cincha straps.

One pair California saddle-bags.

One hair lariat.

Two pairs backstraps.

Two waist-belts and plates, non-commissioned officers'.

The prices of the articles submitted by Captain Mordecai were stated by him in the list submitted.

10. Feed-bag, presented by American Horse-Feeder Company, Boston, Mass.

11. Three bridles, made by James H. Wilson, of Nashville, Tenn.

12. Side-line.

13. G. W. Barnes's pulley bridle-bit.

14. Watering-bridle.

15. Bridle.

16. Homes's belly-band fastener.

The above, from No. 10 to 16, received from the Ordnance Office.

17. Wait's patent feed-bag, from Capt. A. Mordecai, Ordnance Department.

18. Two side-lines, from Capt. A. Mordecai, Ordnance Department.

19. Hopples, presented by Col. I. N. Palmer, Second Cavalry.

20. Side-lines, presented by Col. I. N. Palmer, Second Cavalry.

21. Picket-pin, presented by Lieut. W. C. Rawolle, Second Cavalry.

The Board then adjourned.

FEBRUARY 23, 1874—10 a. m.

The Board met pursuant to adjournment.

Present: 1. Col. I. N. Palmer, Second Cavalry; 2. Capt. J. J. Upham, Sixth Cavalry; 3. Capt. A. Mordecai, Ordnance Department; 4. Capt. L. H. Carpenter, Tenth Cavalry.

Absent: 1. Capt. Guy V. Henry, Third Cavalry.

The following paper was read to the Board:

1. A letter from Capt. D. G. Gordon, Second Cavalry, with indorsements, upon the trial of the hopples submitted by Col. I. N. Palmer, Second Cavalry, referred to the Board by the Chief of Ordnance in the indorsement dated February 17, 1874.

The patterns expected from Watervliet Arsenal not having been received, a telegram was sent to the commanding officer of that Arsenal requesting to be informed when the samples would be forwarded.

A belt, with loops for cartridges, showing the manner in which the belt-holster and pistol-pouch could be carried, was received from Capt. E. R. Wells, Second Cavalry, and examined by the Board.

The Board then adjourned.

FEBRUARY 24, 1874—10 a. m.

The Board met pursuant to adjournment.

Present: 1. Col. I. N. Palmer, Second Cavalry; 2. Capt. J. J. Upham, Sixth Cavalry; 3. Capt. A. Mordecai, Ordnance Department; 4. Capt. L. H. Carpenter, Tenth Cavalry.

Absent: 1. Capt. Guy V. Henry, Third Cavalry.

An answer was received to the telegram sent to the commanding officer of Watervliet Arsenal, New York, stating that the patterns would be forwarded on the 25th instant.

Meeting of board at Watervliet arsenal.

In consequence of the delay and inconvenience caused by the necessity of having samples and patterns desired by the board made at Watervliet Arsenal, a communication was directed to the Adjutant General, United States Army, asking for authority to adjourn to Watervliet Arsenal, in order to expedite the business before the board.

A letter was written to the commanding officer of Watervliet Arsenal, New York, requesting him to make two curb-bits of steel, after models submitted by Capt. W. R. Shoemaker, M. S. K. O. The models and letter of Captain Shoemaker describing them were forwarded for the information of Colonel Hagner, with the request that they be returned.

The Board then adjourned.

FEBRUARY 25, 1874—10 a. m.

The Board met pursuant to adjournment.

Present: 1. Col. I. N. Palmer, Second Cavalry; 2. Capt. J. J. Upham, Sixth Cavalry; 3. Capt. A. Mordecai, Ordnance Department; 4. Capt. L. H. Carpenter, Tenth Cavalry.

Absent: 1. Capt. Guy V. Henry, Third Cavalry.

A communication from Capt. A. Mordecai, Ordnance Department, commanding Leavenworth Arsenal, was read, submitting two samples of Hazen's cartridge-belt with loops for cartridges.

A list of the patterns submitted to the board, not enumerated in Appendix I and Appendix II, was made and is attached to these proceedings and marked Appendix III.

The Board considered and discussed the various patterns submitted.

The Board then adjourned.

FEBRUARY 26, 1874—10 a. m.

The Board met pursuant to adjournment.

Present: 1. Col. I. N. Palmer, Second Cavalry; 2. Capt. J. J. Upham, Sixth Cavalry; 3. Capt. A. Mordecai, Ordnance Department; 4. Capt. L. H. Carpenter, Tenth Cavalry.

Absent: 1. Capt. Guy V. Henry, Third Cavalry.

CAVALRY OFFICERS' SABERS.

Cavalry officers' sabers.

In accordance with the request of the Chief of Ordnance, expressed in letter of December 24, 1873, the Board proceeded to examine the samples of cavalry officers' sabers submitted to it, and, upon consideration, decided to recommend the manufacture of the sample marked saber No. 1, altered as follows: to have tip of scabbard similar to that on saber No. 2, and the weight of the hilt reduced as much as possible.

A letter was written to the Chief of Ordnance, notifying him of this action.

ACTION OF THE BOARD UPON CERTAIN PATTERNS AND MODELS SUBMITTED TO IT.

The following was agreed to unanimously:

Upon examination and discussion of the patterns submitted to the Board, as shown in the lists marked Appendix I and Appendix III, attached to these proceedings, it was resolved that the Board throw aside all, as being unsuited for the cavalry service, excepting the following, which are retained for further consideration, viz:

Acceptance and rejection of certain models.

One cartridge-box, marked F, with tin holder for cartridges.

One cartridge-box, marked F, with wooden holder for cartridges.

One cartridge-pouch, marked E.

One cartridge-pouch, (Dyer's pattern.)

One Hazen's cartridge-belt with double row of loops.

One belt with loops, from Captain Bernard, First Cavalry.

One belt with loops, from Benicia Arsenal, submitted by Capt. A. Mordecai, Ordnance Department.

One belt with loops, from Capt. E. R. Wells, Second Cavalry.

One drawing of curb-bit, from Major Du Bois, Third Cavalry.

Two models of curb-bit, from Capt. W. R. Shoemaker, M. S. K. O.

One drawing of curb-bit, from Capt. H. E. Noyes, Second Cavalry.

One side-line, submitted by Col. I. N. Palmer, Second Cavalry.

One side-line, made by Colonel Mordecai at request of Board.

One picket-pin, from William Lyon.

One model of sweat-leather, from Captain Spaulding, Second Cavalry.

One lariat, from Major Merrill, Seventh Cavalry.

One hair lariat, from Benicia arsenal, through Colonel Mordecai.

One drawing of Kiernan horseshoe, from Col. B. H. Grierson, Tenth Cavalry.

One curry-comb, No. 2, from Major Merrill, Seventh Cavalry.

One curry-comb, No. 18, from Colonel Mordecai.

One horse-brush, No. 101, from Colonel Mordecai.

One horse-brush, No. 401, from Colonel Mordecai.

One felt saddle-cloth, gray, bound yellow, from Colonel Mordecai.

One felt saddle-cloth, blue, bound yellow, from Colonel Mordecai.

One felt saddle-cloth, gray, from Colonel Mordecai.

One felt saddle-cloth, blue, from Colonel Mordecai.

Two hair cinchas, from Benicia arsenal, through Colonel Mordecai.

Four cincha straps, from Benicia arsenal, through Colonel Mordecai.

One California saddle-bags, from Benicia Arsenal, through Colonel Mordecai.

One saddle-bags, made by Colonel Mordecai, at request of Board.

One Homes's belly-band fastener, from Ordnance Office.

The Board then adjourned.

FEBRUARY 27, 1874—10 a. m.

The Board met pursuant to adjournment.

Present: 1. Col. I. N. Palmer, Second Cavalry; 2. Capt. J. J. Upham, Sixth Cavalry; 3. Capt. A. Mordecai, Ordnance Department; 4. Capt. L. H. Carpenter, Tenth Cavalry.

Absent: 1. Capt. Guy V. Henry, Third Cavalry.

A letter was received from Lieut. Col. John P. Hatch, commanding Fourth Cavalry, recommending changes in the supply-table to the Chief of Ordnance. Referred to the Board, from the Ordnance Office, in an indorsement dated February 24, 1874.

The substance of this paper is contained in Abstract F.

A communication was received from Colonel P. V. Hagner, Ordnance Department, commanding Watervliet Arsenal, New York, dated February 25, 1874, transmitting a list of the samples fabricated by his direction, in

accordance with the request of the Board, and stating his opinion upon various changes suggested in the cavalry equipments and accouterments.

The patterns from Watervliet Arsenal not having arrived, and the Board deeming it inexpedient to proceed until they were received, adjourned until March 4, 1874.

MARCH 4, 1874—10 a. m

The Board met pursuant to adjournment.

Present: 1. Col. I. N. Palmer, Second Cavalry; 2. Capt. J. J. Upham, Sixth Cavalry; 3. Capt. A. Mordecai, Ordnance Department; 4. Capt. L. H. Carpenter, Tenth Cavalry.

Absent: 1. Capt. Guy V. Henry, Third Cavalry.

A pattern of curb-bit, invented by Mr. M. A. Penn, was received from the Ordnance Office, together with a description of the invention, referred to the Board by the Chief of Ordnance in an indorsement dated February 28, 1874.

The papers were read and the patterns examined. Consideration upon the matter was deferred.

A communication was read from Capt. George L. Tyler, Second Cavalry, describing his patterns of scouting-belt, with loops for cartridges, and pistol-holster and cartridge-box.

The patterns described in the above letter having been received were examined.

Meeting of Board at Watervliet arsenal.

A telegram was received from the Adjutant General, United States Army, Washington, D. C., dated March 4, 1874, approving the request of the Board to adjourn to Watervliet Arsenal.

The patterns fabricated at Watervliet Arsenal, by request of the Board, were received and examined.

The Board then adjourned.

MARCH 5, 1874—10 a. m.

The Board met pursuant to adjournment.

Present: 1. Col. I. N. Palmer, Second Cavalry; 2. Capt. J. J. Upham, Sixth Cavalry; 3. Capt. A. Mordecai, Ordnance Department; 4. Capt. L. H. Carpenter, Tenth Cavalry.

Absent: 1. Capt. Guy V. Henry, Third Cavalry.

A letter was read from Capt. A. Mordecai, Ordnance Department, commanding Leavenworth Arsenal, dated March 5, 1874, stating that the price of the back-straps for the saddle, as furnished from Benicia Arsenal, is $1.04 instead of 52 cents, as given in a previous letter.

RESOLUTION TO ADJOURN UNTIL MARCH 25, 1874.

Adjournment until March 25, to meet at Watervliet Arsenal.

The Board having completed its business as far as practicable at Fort Leavenworth, and desiring to give additional time to receive answers to the circular letter of the Board from a number of prominent cavalry officers stationed at distant posts, who have not been heard from, and the necessary time for the commanding officer at Watervliet Arsenal to fabricate and alter patterns, it was

Resolved, That in accordance with authority granted by the War Department, the Board adjourn to meet at Watervliet Arsenal on the 25th instant, and that Capt. J. J. Upham, Sixth Cavalry, a member of the Board, be directed to proceed with as little delay as possible to West Troy, N. Y., in order to personally inform the commanding officer of Watervliet Arsenal of the detailed instructions required in making and altering the proposed patterns.

Patterns, &c., to be made at Watervliet Arsenal.

A letter was written to the commanding officer of Watervliet Arsenal requesting him to make and alter certain patterns mentioned in a list furnished to Capt. J. J. Upham, Sixth Cavalry, who is instructed to give the detailed instructions, personally, necessary in the fabrication of said patterns.

The following is the list furnished to Capt. J. J. Upham, Sixth Cavalry:

1. Saddle, arranged for the cincha straps, after the California style.
2. Sweat-leathers, after patterns of Captain Spaulding, Second Cavalry.
3. Hood for stirrups, to extend one-half inch below the bottom of stirrup.
4. Curb-bit; pattern made at Watervliet Arsenal by request of the Board, to be lighter.
5. Halter-chain, of steel, to be lighter than the pattern made at Watervliet Arsenal, by request of the Board.
6. A lariat, to be made of proper thickness, of shoe-thread.
7. Lyon's picket-pin, altered.
8. Saddle-blankets, larger and of heavier material than the pattern now in service.
9. Side-line, according to pattern furnished, with double billet and 1½-inch roller-buckle.

10. Saddle-bags, to be made same size as the canvas saddle-bag, mentioned in Ordnance Memoranda No. 13, of fair and black bridle-leather.

11. Saber-belt, slides for saber-slings to be made flat, of brass; loops for cartridges, after patterns furnished.

12. Pistol-holster, to be furnished with a strap instead of flap.

13. Cartridge-pouch for pistol.

A letter was written to the Adjutant General, United States Army, reporting the adjournment of the Board until the 25th instant, and stating reasons.

The Board then adjourned.

WATERVLIET ARSENAL, N. Y.,
March 25, 1874—10 a. m.

The Board met pursuant to adjournment.

Present: 1. Capt. J. J. Upham, Sixth Cavalry; 2. Capt. A. Mordecai, Ordnance Department; 3. Capt. L. H. Carpenter, Tenth Cavalry.

Absent: 1. Col. I. N. Palmer, Second Cavalry; 2. Capt. Guy V. Henry, Third Cavalry.

ORDER RELIEVING CAPT. GUY V. HENRY, THIRD CAVALRY, AS A MEMBER, AND DETAILING CAPT. WILLIAM HAWLEY, THIRD CAVALRY, IN HIS STEAD.

Special Orders No. 45, War Department, Adjutant General's Office, Washington, D. C., March 2, 1874, was read, relieving Capt. Guy V. Henry, Third Cavalry, as a member of the Board, and detailing in his stead Capt. William Hawley, Third Cavalry.

Captain Hawley being present reported for duty with the Board.

A letter from Captain Mordecai, Ordnance Department, commanding Leavenworth Arsenal, dated March 12, 1874, was read, stating that the patterns retained for further consideration had been forwarded to the commanding officer of Watervliet Arsenal, as requested by the Board.

A communication from the Ordnance Office, Washington, D. C., dated March 9, 1874, was received, transmitting patterns of picket-pins invented by Lieut. F. K. Upham, First Cavalry, General Albert Pike, and the picket-pin adopted by the Saint Louis Board.—(See Ordnance Memoranda No. 11, pp. 18 and 20,) with two letters inclosed from Lieut. F. K. Upham, describing his invention.

These papers were read and filed.

A letter from Col. B. H. Grierson, Tenth Cavalry, superintendent of the mounted recruiting service, was received, transmitting four communications from Mr. John Kiernan, chief farrier Cavalry Barracks, Saint Louis, Mo., describing patterns of curb-bits, made of spring-steel; two patterns of clinching-tongs, and two patterns of cast-steel horseshoes invented by him.

These papers having been read by the Board, were filed for future consideration.

The patterns of picket-pins from the Ordnance Office, and the patterns forwarded by Col. B. H. Grierson, Tenth Cavalry, mentioned in the foregoing papers, were received and examined.

A communication from the Chief of Ordnance, dated March 11, 1874, was received and read, stating that the commanding officer of the Watervliet Arsenal issued February 25, 1874, to the commanding officer of Leavenworth Arsenal, three gauges for inspecting cavalry saddle-trees, for the use of the Board.

A letter from W. B. Johns, and inclosures, were read, describing his patent leggins, which he submits for the consideration of the Board. Referred by the Chief of Ordnance in an indorsement dated March 10, 1874.

The pattern of leggins described in the above papers was received from the Ordnance Office and examined by the Board.

A communication from Mr. M. A. Penn was read, describing his improved combination bridle-headstall, which he submits to the Board. Referred by the Chief of Ordnance in an indorsement dated March 2, 1874.

The headstall was received from the Ordnance Office and examined.

A letter from Quartermaster General M. C. Meigs, U. S. A., was read, submitting a sample of the Namaqua gun-sling, used by the British officers and sportsmen in South Africa. Referred by the Adjutant General United States Army, in an indorsement dated March 7, 1874.

The pattern was examined by the Board.

A copy of a letter from Capt A. Mordecai, Ordnance Department, commanding Leavenworth Arsenal, dated March 20, 1874, was read, forwarding patterns and articles to the Ordnance Office, which were referred for consideration of the Board by the Chief of Ordnance, and on all of which action has been taken.

The Board then adjourned.

MARCH 26, 1874—10 a. m.

The Board met pursuant to adjournment.

Present: 1. Capt. J. J. Upham, Sixth Cavalry; 2. Capt. A. Mordecai, Ordnance Department; 3. Capt. William Hawley, Third Cavalry; 4. Capt. L. H. Carpenter, Tenth Cavalry.

Absent: 1. I. N. Palmer, Second Cavalry.

TRANSPORTATION OF THE GATLING GUN WITH CAVALRY.

Transporting Gatling gun in cavalry service.

A communication was received from the Chief of Ordnance, dated March 25, 1874, stating that, by authority of the War Department, he transmits copies of letters on the manner of packing the Gatling gun on pack-animals, for the consideration and report of the Board, and requests that the Board determine the best manner of transporting this gun, whether on a carriage or on a pack-animal. States, also, that the commanding officer of the National Armory, Springfield, Mass., has been directed to send to Watervliet Arsenal a Gatling gun, pack-saddle, &c.

Capt. John R. Edie, Ordnance Department, appeared before the Board and presented the Gatling gun, pack-saddle, &c., forwarded from the National Armory, for the consideration of the Board.

The Board then proceeded to examine the method of packing the gun on pack-animals proposed by Maj. J. G. Benton, Ordnance Department, and the patterns submitted, as explained to them by Captain Edie, who caused animals to be packed with the gun and stand in the manner suggested, and also exhibited the method of firing from the stand.

The Board then adjourned.

MARCH 27, 1874—10 a. m.

The Board met pursuant to adjournment.

Present: 1. Capt. J. J. Upham, Sixth Cavalry; 2. Capt. A. Mordecai, Ordnance Department; Capt. William Hawley, Third Cavalry; 4. Capt. L. H. Carpenter, Tenth Cavalry.

Absent: 1. Col. I. N. Palmer, Second Cavalry.

The Board resumed the consideration of the proper manner of transporting the Gatling gun for the cavalry service.

The Board then adjourned.

MARCH 28, 1874—10 a. m.

The Board met pursuant to adjournment.

Present: 1. Capt. J. J. Upham, Sixth Cavalry; 2. Capt. A. Mordecai, Ordnance Department; 3. Capt. William Hawley, Third Cavalry; 4. Capt. L. H. Carpenter, Tenth Cavalry.

Absent: 1. Col. I. N. Palmer, Second Cavalry.

The Board resumed the consideration of the methods proposed for transporting the Gatling gun.

RESOLUTION ON THE TRANSPORTATION OF THE GATLING GUN.

The following resolution was offered and unanimously adopted: Transporting Gatling gun in cavalry service.

Resolved, That the Board, after due consideration of the subject in its different bearings, is of the opinion,

1. That the Gatling gun cannot be carried on a pack-animal with benefit to the cavalry service. It would be almost impossible to carry the gun so packed in the rapid pursuit of Indians, and in case of an attack by them the necessary delay in unpacking and mounting the gun would render it useless. If the gun was mounted in action, on the stand proposed by Major Benton, it would have to be conveyed from one position to another by hand, and where a rapid advance or retreat would be made the gun could not be packed in an instant, or carried by men on foot rapidly, and, in some cases, might have to be abandoned in consequence.

2. This proposed method of transportation would require the use of two pack-animals.

3. In view of these facts, the Board would recommend that the Gatling gun be mounted on light wheels, the carriage capable of being drawn by one animal, the ammunition to be carried on the axle, upon each side of the gun, in boxes of suitable shape and size.

The Board is of the opinion that it is very desirable, if possible, to construct the gun-carriage so that the wheels track with ordinary vehicles used with cavalry.

The Board then proceeded to test the working qualities of the cavalry forge, prescribed in Ordnance Memoranda No. 13.

A letter from E. H. Fitler & Co., Philadelphia, to Col. P. V. Hagner, Ordnance Department, dated March 25, 1874, upon material for lariats, was referred to the Board by Colonel Hagner and read.

A communication was sent to the Chief of Ordnance, Washington, D. C.,

informing him of the action of the Board upon the transportation of the Gatling gun with cavalry, and inclosing a copy of the resolution.

The Board then adjourned

MARCH 30, 1874—10 a. m.

The Board met pursuant to adjournment. Present, all the members.

Major Merrill, Seventh Cavalry, appeared before the Board and submitted patterns of lariats made from shoe-thread, and a pattern of side-line, which were explained by him.

OPINIONS OF CAVALRY OFFICERS.

Replies to circular letter of the Board.

The replies from one hundred and twenty-seven cavalry officers to the circular letter of the Board having been received, were considered; the substance of these opinions being placed in tabular form in a paper appended to these proceedings and marked Abstract G. The original papers are numbered and accompany the abstract.

The Board then adjourned.

MARCH 31, 1874—10 a. m.

The Board met pursuant to adjournment. Present, all the members.

A letter from Lieut. W. R. Parnell, First Cavalry, dated February 23, 1874, was read, submitting a pattern of curry-comb with strap as his invention. The curry-comb was received and examined.

The Board then adjourned.

APRIL 1, 1874—10 a. m.

The Board met pursuant to adjournment. Present, all the members.

A letter was received and read from J. R. King, of Saint Paul, Minn., dated March 17, 1874, describing the King-Tileston cartridge-box, which he submits to the Board. The cartridge-box described in this paper was received and examined.

The Board resumed the consideration of the horse-equipments.

The Board then adjourned.

APRIL 2, 1874—10 a. m.

The Board met pursuant to adjournment. Present, all the members.

A communication from Col. P. V. Hagner, Ordnance Department, was read, in which he recommends that some system be adopted for the uniform and efficient instruction of the mechanics belonging to cavalry companies.

The Board resumed the consideration of the horse-equipments.

The Board then adjourned.

APRIL 3, 1874—10 a. m.

The Board met pursuant to adjournment. Present, all the members.

A letter from Schuyler, Hartley & Graham, of New York, dated April 1, 1874, was read, submitting a description of the Spencer graduated felt saddle-cloth, and indorsements in favor of it; also inclosing a letter from Captain Russell, Third Cavalry, reporting favorably upon it.

A letter from Major Merrill, Seventh Cavalry, was received and read, stating the advantages claimed in patterns of side-lines submitted by him.

Also, a letter from the same officer, submitting patterns of curry-combs with the hoof-hook attached, and open-backed, with handle of iron.

The Board resumed the consideration of the horse-equipments.

The Board then adjourned.

APRIL 4, 1874—10 a. m.

The Board met pursuant to adjournment. Present, all the members.

Additional papers were received from the Ordnance Office upon the subject of the "cavalry carrying-braces," being submitted in an indorsement by the Chief of Ordnance, dated April 2, 1874, No. 1655, and were read before the Board.

Samples of the knapsack, boxes, and braces invented by Lieutenant Palmer, were received from the Ordnance Office and examined by the Board.

The Board resumed the consideration of the horse-equipments.

The Board then adjourned.

APRIL 6, 1874—10 a. m.

The Board met pursuant to adjournment. Present, all the members.

Communications from Schuyler, Hartley & Graham, of New York, and indorsements relating to the Spencer felt saddle-cloth were read to the Board.

These papers were submitted in an indorsement from the Ordnance Office, dated April 2, 1874.

Mr. William P. Kellogg appeared before the Board and exhibited and explained his portable forge, with fan.

The Board resumed the consideration of the horse-equipments.

ACTION UPON CERTAIN PATTERNS AND MODELS SUBMITTED.

The following resolution was adopted:

Patterns, &c., laid aside by the Board.

Resolved, That upon examination of the patterns and models named in the following list, some of which were retained for further consideration, and upon which action has not been taken, the Board is of the opinion that it is not advisable to adopt them, or any of them, for use in the cavalry service, although many have merit which the Board recognizes:

Cartridge-box marked F, with tin holder for cartridges.

Cartridge-box marked F, with wooden holder for cartridges.

Belt, with loops, from Captain Bernard, First Cavalry.

Belt, with loops, from Benicia Arsenal.

Belt, with loops, from Capt. E. R. Wells, Second Cavalry.

Belt, with loops, from Capt. Geo. L. Tyler, Second Cavalry.

Pistol-holster, from Capt. Geo. L. Tyler, Second Cavalry.

Pistol cartridge-box, from Capt. Geo. L. Tyler, Second Cavalry.

Model of curb-bit, from Capt. H. E. Noyes, Second Cavalry.

Lariats, (three patterns,) from Major Merrill, Seventh Cavalry.

Side-line, from Major Merrill, Seventh Cavalry.

Curry-comb, No. 2, from Major Merrill, Seventh Cavalry.

Curry-comb, No. 18, from New York Agency, Ordnance Department.

Hair cinchas, from Benicia Arsenal.

Cincha-straps, from Benicia Arsenal.

California saddle-bags, from Benicia Arsenal.

Homes's belly-band fastener, received from Ordnance Office.

Curb-bit, invented by W. A. Penn, received from Ordnance Office.

Picket-pin, invented by Lieut. F. K. Upham, First Cavalry, received from Ordnance Office.

Picket-pin, invented by General Albert Pike, received from Ordnance Office

Four curb-bits, from John Kiernan, chief farrier, Cavalry Depot, Saint Louis, Mo.

Two clinching-tongs, from John Kiernan, chief farrier, Cavalry Depot, Saint Louis, Mo.

One steel shoe (horse,) from John Kiernan, chief farrier, Cavalry Depot, Saint Louis, Mo.

Leggins, patented by W. B. Johns, received from Ordnance Office.

Combination bridle-headstall, invented by W. A. Penn, received from Ordnance Office

Namaqua gun-sling, submitted by Quartermaster General M. C. Meigs, received from Ordnance Office.

Curry-comb, with strap, from Lieut. W. R. Parnell, First Cavalry.

Cartridge-box, known as the King-Tileston pattern, received from J. R. King, of Saint Paul, Minn.

Portable forge, with fan, submitted by W. P. Kellogg.

Cavalry carrying-braces, invented by Lieutenant Palmer, Sixteenth Infantry.

Knapsack, invented by Lieutenant Palmer, Sixteenth Infantry.

Cartridge-boxes, invented by Lieutenant Palmer, Sixteenth Infantry.

The Board then adjourned.

APRIL 7, 1874—10 a. m.

The Board met pursuant to adjournment. Present, all the members.

The Board resumed the consideration of the horse-equipments.

After discussing the saddle complete, the Board finally agreed unanimously upon the resolution marked No. 1.

Upon the subject of the bridle the Board finally adopted unanimously the resolution marked No. 2.

Upon the subject of the curb-bit the Board adopted the resolution marked No. 3, by the following vote:

Yeas—Col. I. N. Palmer, Second Cavalry; Capt. J. J. Upham, Sixth Cavalry; Capt. Wm. Hawley, Third Cavalry; Capt. L. H. Carpenter, Tenth Cavalry.

Nay—Capt. A. Mordecai, Ordnance Department.

Upon the subject of the saddle-bags the Board agreed unanimously upon the resolution marked No. 4.

A letter from Schuyler, Hartley & Graham, of New York, was read, stating the prices at which the felt cloth could be furnished.

The Board then adjourned.

APRIL 8, 1874—10 a. m.

The Board met pursuant to adjournment. Present, all the members.

Mr. R. A. Goodenough appeared before the Board and explained the horseshoe patented by him, and exhibited samples. The Board had several horses shod after this system, under the direction of Mr. Goodenough.

The Board then witnessed a further trial of the mountain-howitzer forge, at which a heavy piece of tire-iron was welded in five minutes.

The Board then continued the discussion upon the horse-equipments.

The Board then adjourned.

APRIL 9, 1874—10 a. m.

The Board met pursuant to adjournment. Present, all the members.

The Board resumed the consideration of the horse-equipments, and agreed unanimously upon resolutions marked Nos. 5, 6, 7, 8, and 9.

Horse-equipments.

Upon the subject of the cavalry equipments, experimental, and the cavalry accouterments, the Board adopted unanimously the resolutions marked Nos. 10 and 11.

The Board then adjourned.

APRIL 10, 1874—10 a. m.

The Board met pursuant to adjournment. Present, all the members.

The discussion of the saddlers' and blacksmiths' tools and materials and the supply-table was taken up. The Board agreed unanimously upon the resolutions marked Nos. 12, 13, 14, 15, and 16; and upon the question of the equipments necessary for a cavalry trooper adopted the resolution marked No. 17.

Saddlers' and blacksmiths' tools and materials.

Equipments for a cavalry trooper.

The Board then adjourned.

APRIL 11, 1874—10 a. m.

The Board met pursuant to adjournment. Present, all the members.

The Board agreed unanimously to the resolution marked No. 18, recommending the adoption of the changes, alterations, and additions to the horse-equipments, cavalry equipments, accouterments, and supply-table of tools and materials for the cavalry service, set forth in the previous resolutions. Modification of horse-equipments, cavalry equipments, accouterme'ts, and supply-table of tools and materials.

The following was adopted:

Resolved, That the Board, having completed all of the business before it, adjourn until the 28th of April, 1874, in order to give time for the preparation of its report, together with the drawings, photographs, and samples of the patterns adopted. Adjournment until April 28.

Capt. A. Mordecai, Ordnance Department, desiring to return as soon as possible to his station at Leavenworth Arsenal, Kansas, (that post having been ordered to be discontinued,) asked permission to be excused from further attendance, he having been present during all of the transactions of the Board, and having voted upon its different resolutions.

The Board then adjourned.

APRIL 28, 1874—10 a. m.

The Board met pursuant to adjournment.

Present: 1. Col. I. N. Palmer, Second Cavalry; 2. Capt. W. Hawley, Third Cavalry; 3. Capt. L. H. Carpenter, Tenth Cavalry.

Absent: 1. Capt. A. Mordecai, Ordnance Department, by permission of the Board; 2. Capt. J. J. Upham, Sixth Cavalry.

The drawings and photographs of patterns not being completed, the Board adjourned.

APRIL 29, 1874—10 a. m.

The Board met pursuant to adjournment.

Present: 1. Col. I. N. Palmer, Second Cavalry; 2. Capt. W. Hawley, Third Cavalry; 3. Capt. L. H. Carpenter, Tenth Cavalry.

Absent: 1. Capt. A. Mordecai, Ordnance Department, by permission of the Board; 2. Capt. J. J. Upham, Sixth Cavalry.

The drawings and photographs of patterns not being completed, the Board adjourned.

APRIL 30, 1874 10 a. m.

The Board met pursuant to adjournment.

Present: 1. Col. I. N. Palmer, Second Cavalry; 2. Capt. W. Hawley, Third Cavalry; 3. Capt. L. H. Carpenter, Tenth Cavalry.

Absent: 1. Capt. A. Mordecai, Ordnance Department, by permission of the Board; 2. Capt. J. J. Upham, Sixth Cavalry.

A pattern of cartridge-vest submitted by Schuyler, Hartley & Graham, of New York, was examined. The Board decided that its advantages and merits were not such as to warrant its adoption in the service.

An additional pattern of side-line, consisting of leglets of leather connected by wire-cord, was received from Maj. Lewis Merrill, Seventh Cavalry. Upon examination and consideration, the Board concluded that wire-rope was objectionable for this use on account of the difficulty of mending breakages, which are apt to occur in the field.

An indorsement from the Chief of Ordnance, United States Army, dated April 21, 1874, was received, submitting a sample of Cline's luggage-supporter, together with papers relating thereto, and requesting an expression of opinion on its merits. Upon examination and consideration of the papers accompanying this patent the Board finds that it has been tested in the field and reported upon, and that the mass of the testimony appears to be unfavorable in consequence of its effect in wearing holes in the luggage and interfering with high withers. It could not be used in the cantle of the saddle in connection with the new saddle-bags adopted by the Board; and in view of these facts the Board is of the opinion that the merits and advantages of the "Cline's luggage-supporter" are not such as to warrant the Board in recommending its adoption in the cavalry service.

Maj. G. W. Schofield, Tenth Cavalry, submitted to the Board an article which it is thought might be a valuable addition to the cavalry equipments. This consists of a combination of the hoof-hook, hammer, and two small screw-drivers, of sizes suitable for taking apart and putting together the carbine and pistol; it can be carried in the pocket of the soldier. The cost, as given by Major Schofield, is about 16 cents. A pattern of this instrument, with drawings, is submitted with these proceedings, and it is recommended that a trial be made of the same.

A pattern hitching-strap was received from Mr. David Ross, No. 87 Water street, New York. Upon examination the Board decided not to recommend it for adoption in the cavalry service.

MAY 2, 1874—10 a. m.

The Board met pursuant to adjournment.

Present: 1. Col. I. N. Palmer, Second Cavalry; 2. Capt. J. J. Upham, Sixth Cavalry; 3. Capt. William Hawley, Third Cavalry; 4. Capt. L. H Carpenter, Tenth Cavalry.

Absent: 1. Capt. A. Mordecai, Ordnance Department, by permission of the Board.

The commanding officer of Watervliet Arsenal was requested to forward the cavalry forge-cart, and other models and patterns adopted by the Board, to the War Department, Washington, D. C.

The photographs and drawings not being finished, the Board adjourned until May 4, 1874.

MAY 4, 1874—10 a. m.

The Board met pursuant to adjournment.

1. Present: Col. I. N. Palmer, Second Cavalry; 2. Capt. J. J. Upham, Sixth Cavalry; 3. Capt. William Hawley, Third Cavalry; 4. Capt. L. H. Carpenter, Tenth Cavalry.

Absent: 1. Capt. A. Mordecai, Ordnance Department, by permission of the Board.

The proceedings of the Board were read and approved.

The Board then adjourned.

I. N. PALMER,
Colonel Second Cavalry, President.
J. J. UPHAM,
Captain Sixth Cavalry.
A. MORDECAI,
Captain, Ordnance Department.
WM. HAWLEY,
Captain Third Cavalry
L H. CARPENTER,
Captain Tenth Cavalry, Recorder.

MAY 5, 1874—10 a. m.

The Board met pursuant to adjournment.

Present: 1. Col. I. N. Palmer, Second Cavalry; 2. Capt. J. J. Upham, Sixth Cavalry; 3. Capt. William Hawley, Third Cavalry; 4. Captain L. H. Carpenter, Tenth Cavalry.

Absent: 1. Capt. A. Mordecai, Ordnance Department, by permission of the Board.

There being no further business before it, the Board adjourned *sine die.*

I. N. PALMER,

Colonel Second Cavalry, President of the Board.

L. H. CARPENTER,

Captain Tenth Cavalry, Recorder of the Board.

RESOLUTIONS.

RESOLUTION No. 1.

The Saddle complete.

Saddle complete.

The Board is of the opinion that the saddle, as now established for the cavalry service, should be changed to conform to the following, namely:

The McClellan tree, according to the drawings and patterns submitted; the parts to be smooth and well painted with white-lead; the pommel-arc, pommel-plate, cantle-arc, cantle-plate, and straps for stirrup-loops to be of wrought iron let into the wood, and to be fastened thereto by iron rivets; the stirrup-loops to be of wrought iron, rectangular in shape. The tree to be covered with black leather; the seams on the cantle and on the pommel to be re-enforced by welts of leather; to be without skirts. The shield and the ovals to be of brass, as at present, and to be firmly attached by brass screw-pins not less than $\frac{5}{8}$ inch in length. The rings, with their staples on the front ends of bars, and foot-staples, as now issued, to be of brass. Two brass rings, $1\frac{1}{4}$ inches interior diameter, to be fastened by brass staples into the rear ends of the side-bars. The girth-strap over the pommel to be 38 inches long when finished, and that over the cantle to be 39 inches long when finished. These straps to be attached to the D-ring on the off side as at present, and on the near side to a circular ring $2\frac{1}{2}$ inches in diameter. Safes of stout leather, of the pattern in drawing, 5 by $5\frac{1}{2}$ inches, to be placed under the rings; to be riveted to the girth-straps and to the girth-billet on the off side, and to the girth-strap only on the near side.

The saddle-trees to be of three sizes, as at present:

No. 1. Length of seat, 11 inches, 15 per cent.

No. 2. Length of seat, $11\frac{1}{2}$ inches, 50 per cent.

No. 3. Length of seat, 12 inches, 35 per cent.

The length of the side-bars to correspond with the length of the seat. The other dimensions to be the same in all trees, as shown in drawing.

The girth to be of strong blue-linen webbing, $7\frac{1}{2}$ inches wide and 25

inches in length, measured from the inside of roller, on 2-inch buckle, to the inside of curved part of the D-ring, and the rings as at present, to be of iron, japanned black; the safes of heavy leather, of size and shape as indicated in the drawing.

Coat-strap as at present, excepting that the buckles are to be of brass.

Stirrup-leathers as at present.

Stirrups to be of wood, of the present pattern; the sole to be 3 inches wide. The hood to be of thick harness-leather, stamped with letters U. S. in the center of front; the shape to be as in the drawing; the bottom of hood to project $\frac{3}{4}$ inch below the plane of the under-side of the stirrup.

The carbine-socket to be as at present. All iron buckles and iron rings to be japanned black.

RESOLUTION No. 2.

The Curb-bridle.

Curb-bridle. The Board is of the opinion that the headstall and reins of the curb-bridle now established for the cavalry service, should be changed to conform to the following, namely:

The headstall, of black bridle-leather, to be composed of one crown-piece, the ends split, forming one cheek-strap billet on each side; two cheek-straps, one chape and one brass bar-buckle sewed to the lower end of each, and one brass bar-buckle to the upper end of each; one throat-latch, with brass bar-buckle at each end; one brow-band, as at present; two brass ornaments, one on each side of the brow-band, fastened thereto by rivet passing through cut between billets. The general size of the headstall and the width of the leather parts as at present.

The reins, of black bridle-leather, to be attached to bit by brass bar-buckles, the other ends to be sewed together at equal distance from the buckles, one rein forming a thong eighteen inches long, beyond the stitching. The length and width of reins as at present. The frame of all brass buckles to be lighter than the iron buckles now in use, like the photograph and pattern submitted.

RESOLUTION No. 3.

The Curb-bit and Curb-strap.

The Board is of the opinion that hereafter the curb-bit should be made as follows, namely: Curb-bit.

The bit of good shear-steel, bright finished; two branches, each shaped as per drawing, with curve at the top for cheek-strap billet; slot in the branch for curb-strap; eye at the lower end of branch, into which is welded the ring for the rein; one mouth-piece, securely riveted to the branches; one cross-bar, securely riveted to the branches near the lower end; two ornaments of cast brass, the letters U. S. raised thereon, riveted to the branches, as in the pattern. Bits to be of three varieties, all alike, except in the form of mouth-pieces. All mouth-pieces to be six-tenths (0″.6) of an inch in diameter, and four (4″.75) inches and seventy-five-hundredths of an inch between the branches.

The height of the arch to be as follows, namely:

No. 1, 0.5 inch.

No. 2, 1.0 inch.

No. 3, 1.5 inch.

To be manufactured in the following proportion, and to be so furnished to troops, unless otherwise called for, namely:

20 per cent. of No. 1.

70 per cent. of No. 2.

10 per cent. of No. 3.

That the curb-strap should be made as follows, namely: Curb-strap.

One safe-strap $7\frac{1}{4}$ inches long, $1\frac{1}{4}$ inches wide, on the face of which is sewed one strap 20 inches long and $\frac{5}{8}$ inch wide, the ends forming billets that pass into two bar-buckles of brass, attached to the safe by this strap, like the pattern submitted.

RESOLUTION No. 4.

The Saddle-bags.

The Board is of the opinion that the saddle-bags prescribed by General Orders No. 60, War Department, series 1872, should be changed to conform to the following, namely: Saddle-bags.

To be composed of two pouches and one seat; the body of each pouch to be of black bag-leather, with flap of black collar-leather. Pouches to be 10 by 12 inches in the clear. Gusset, 3 inches wide at bottom, and 2.5 inches wide at top. The off-side pouch, for clothing, to be lined with planters' linen sewed in with gusset, to have an inside pocket of the same linen for brush, soap, &c.; the near-side pouch, for rations, to be lined with planters' linen attached to the leather-work by buttons. A pocket 7 by 5 inches, and 1.5 inches wide in the clear, sewed to the outside of the near pouch for horse-shoes and horseshoe-nails; this pocket to have a flap, fastened by buckle and billet. A pocket without flap to be sewed to the outside of the off pouch, for horse-brush and curry-comb; the front of this pocket to be cut open for 4 inches and fastened by a leather lacing; the pocket to be $8\frac{1}{2}$ by $5\frac{1}{2}$ inches. The flap to cover each pouch to be 16 by $11\frac{3}{4}$ inches, to be secured to the top of the back and to the seat by two seams, and by two rivets; to have two billets $\frac{3}{4}$ inch wide sewed on the inside near the lower edge, 6 inches apart, to enter brass buckles secured by chapes, sewed to the under side of gusset; the letters U. S. to be stamped on front of the flap. A leather strap for securing the saddle-bags to the girth-strap rings to be riveted to the back of each pouch, $3\frac{1}{2}$ inches from the bottom, and $2\frac{1}{2}$ inches from the front edge, to be 15 inches long, and to have $\frac{3}{4}$-inch wire buckles of brass. The seat of the bags to be $18\frac{1}{4}$ inches long in front, and $16\frac{1}{4}$ inches long in rear; to fit smoothly over the cantle; to have one hole for saddle-bag stud, two slits for foot-staples, and two slits for rings; to have two key-straps riveted to the seat to pass through the foot-staples; near pouch to contain two canvas bags 10 inches long, $5\frac{3}{4}$ inches wide; when finished, to be closed at top by drawing-string, for soldier's rations of sugar and coffee. All to be in accordance with patterns and drawings submitted.

RESOLUTION No. 5.

The Halter.

Halter.

The Board is of the opinion that the halter now established should be changed as follows, namely:

To be of the same pattern and dimensions as at present, with these modifications: The nose-band to be of such length as to set more neatly to the head of the horse. The chin-strap to pass loosely through the square loops,

and through the hitching-strap ring; the ends to be fastened by one 1⅛-inch bar-buckle, in order to facilitate the adjustment of the halter; two sliding loops to be on the chin-strap. The iron parts to be japanned black, and everything to be as shown in the pattern submitted.

RESOLUTION No. 6.

Saddle-blanket, horse-brush, curry-comb, picket-pin, lariat, link, and nose-bag.

The Board is of the opinion that the articles named below, belonging to the horse-equipments, should be changed to conform as follows, namely:

Saddle-blanket.—To be 7 feet long by 6 feet wide, of pure wool, closely woven into stout yarns; to be of a dark-blue color, with a yellow border 3 inches wide, and 3 inches from the edge. The letters U. S., 6 inches high, of yellow color, to be in the center of the blanket. Saddle-blanket.

Horse-brush.—To have one body of stout leather, with Russia bristles, one strap for hand. The stitching around the edge of body to be with brass wire. The size to be that of the sample submitted. Horse-brush.

Curry-comb.—A modification of the pattern submitted by Maj. Lewis Merrill, Seventh Cavalry: To be of a good quality of iron, japanned black. The body to be curved at the sides, and strongly re-enforced by wrought-iron plates riveted; one handle of wrought iron, with shank firmly riveted to body, and a hoof-hook attached by one rivet to handle; to have two stops on handle, one to limit the opening, the other to limit the closing of the hook, as in the sample forwarded. Curry-comb.

The picket-pin.—Of the pattern known as the Lyon's patent: The pin proper to be cylindrical, 15 inches long by ⅝ inch, round iron, and the head stout enough to resist upsetting by being struck. The swivels and ring to be of the pattern and of the dimensions indicated in the drawing, and like the sample submitted. To be painted black. Picket-pin.

Lariat.—To be of the best Italian hemp, tightly twisted, 1¼ inches circumference, 30 inches long, of four strands; an eye spliced in one end, the other whipped with small twine, as at present. Lariat.

Link.—To be ¾ inch wide, of length as at present. At one end a strong snap of steel-wire, at the other a bar-buckle and billet, and like sample submitted. Link.

Nose-bag. *Nose-bag.*—To be of the pattern now in use. The head-strap on each side to be sewed to the linen body by two rows of stitching; holes $\frac{1}{4}$ inch in diameter, to be punched through the two straps, and through the body $\frac{3}{4}$ inch apart from center to center, placed as in the sample submitted.

RESOLUTION No. 7.

The felt saddle-cloth, halter-chain, side-line, sweat-leathers, and stirrup with socket for standard and guidon, to be added to the horse-equipments.

The Board is of the opinion that to the horse-equipments now issued the following articles should be added, namely:

Felt saddle-cloth. *The felt saddle-cloth.*—A graduated felt saddle-cloth of dark-blue, of the same shape and dimensions as the pattern submitted.

Halter-chain. *Halter-chain.*—Of the pattern and dimensions of the sample submitted.

Sweat-leathers. *Pair of sweat-leathers.*—A modification of the model submitted by Captain Spaulding, Second Cavalry, of the shape and dimensions of the pattern forwarded.

Stirrups with sockets. *Stirrup with socket for standard and guidon.*—The stirrup with the hood same as that described in resolution No. 1 of the Board. The socket of stout leather, to be 6 inches long and $1\frac{1}{2}$ inches in diameter, interior measurement. The socket to be attached to hood by two straps $\frac{5}{8}$ inch wide, like the sample submitted.

Side-line. *Side-lines* to be composed of leglets of leather fastened by a steel wire snap, connected by a chain $\frac{3}{16}$ inch iron link, of the same shape and dimensions as the pattern submitted.

The side-lines to be issued of three sizes, in equal proportions:

No. 1. Length of chain, 18 inches.

No. 2. Length of chain, 24 inches.

No. 3. Length of chain, 30 inches.

Steel leglets. In this connection the Board would desire to state, that in view of the fact that the leather leglets are known to deteriorate in strength, upon exposure to moisture and the weather, a number of tests were made with side-lines furnished with steel leglets, calculated to determine the effect of exposure and dirt upon various patterns submitted. Although the Board is unable fully to determine the value of the steel leglet, still, as it has the advantages

of being less cumbersome, lighter in weight, and can be placed on or taken off the horse with greater facility than the leather, and as the whole question of the side-line is one of great importance to the cavalry service, it is recommended that a number of side-lines be made furnished with leglets of steel of the pattern submitted, and issued for trial in the field. The Board recommends the steel to be used, as iron was found to be too soft to stand the necessary strain without bending out of shape.

RESOLUTION No. 8.

Articles requiring no change belonging to the horse-equipments.

Articles needing no change.

The Board is of the opinion that the following articles, pertaining to the horse-equipments, prescribed in General Orders No. 60, War Department, series 1872, require no change, namely:

The surcingle of blue-linen webbing 4 inches wide.

Spurs of brass, smooth finish with steel rowel.

Spur-straps $\frac{3}{4}$ inch wide; the buckle of brass wire.

Forage-sack of canvas.

Watering-bridle, bit, and reins.

RESOLUTION No. 9.

Articles of the horse-equipments prescribed in General Orders No. 60, War Department, series 1872, not required.

Articles not required.

The Board is of the opinion that the following articles, pertaining to the horse-equipments, prescribed in General Orders No. 60, War Department, series 1872, are not required for the cavalry service, namely:

The saddle and feed cloth.

The brush and shoe pouch.

RESOLUTION No. 10.

Cavalry accouterments.

Cavalry accouterments.

The Board is of the opinion that the cavalry accouterments, as now established, should be changed to conform to the following, namely:

Saber-belt. Saber-belt of black leather, 38 inches and 42 inches in length and $1\frac{7}{8}$ inches wide; to have two slides of cast brass with loop cast at lower end for hooks of the saber-slings. The slides to be free and to move on the belt. A flat brass hook to be riveted to one end of the belt for regulating the length. A loop of cast brass, sewed and riveted at the other end of the belt, to connect with the plate. With the loop of one of the brass slides is fastened by a cold shut-bend, a saber-hook, made of sheet brass No. —, $\frac{3}{8}$ inch wide at loop and $\frac{3}{16}$ wide at point.

The belts to be made and furnished of two sizes:

No. 1. 38 inches long, 50 per cent.

No. 2. 42 inches long, 50 per cent.

Saber belt-plate. The saber belt-plate as at present.

Saber-sling and sling-hook. Saber-slings and sling-hooks as at present.

Carbine cartridge-pouch. Carbine cartridge-pouch of black collar-leather, to contain 40 cartridges for the carbine, composed of one back and one flap cut in one piece, one front, one gusset $1\frac{1}{2}$ inches wide excluding seems; the ends of the gusset to extend $1\frac{1}{2}$ inches over the top of pouch, each end to be attached by one rivet to a piece of leather sewed to the front of the pouch; the pouch to have a pocket for the screw-driver, closed by a brass button. The back and front of the pouch to be lined with sheep-skin. The flap to the pouch to be fastened by a brass button. The letters U. S., $\frac{3}{4}$ inch long, to be stamped on the front of the flap. Two loops sewed and riveted to the back to receive the waist-belt. The back, front, and flap to have the natural grain of the leather; the gusset to have the grain broken. The shape and dimensions of the pouch to be like the drawings and pattern submitted.

Pistol cartridge-pouch. Pistol cartridge-pouch of black collar-leather, the grain broken except in the flap, which is to have the natural surface. The letters U. S. to be stamped on the front of the flap. The parts to be the same as in the pouch for carbine-cartridges, omitting the pocket for screw-driver and the two pieces of leather for the attachment of the prolonged end of the gusset to the front of the pouch, these ends to be sewed to the back and front. The pouch to be lined with sheep-skin. The shape and dimensions to be like the drawings and pattern submitted.

Pistol-holster. The pistol-holster to be composed of body, strap, and loop for the belt and swivel attachment. The body to be of black bridle-leather, made so that the pistol shall fit neatly into it. The strap to confine the pistol in the

holster to be 2¾ inches wide at the widest part, to be sewed to the back of body and fastened in front by a brass button. The loop for the belt to be attached to the body by a swivel-bolt, with head and plate, with stop riveted firmly to loop, and a slot cut in the head into which the stop operates. The end of the swivel-bolt to be riveted to a plate, which plate is fastened by rivets to a leather safe, this latter being attached to the body of the holster by stitching and by three brass rivets. The swivel attachment allows the holster to move on the belt through an arc of 45°. All to be like the drawings and samples submitted.

Cartridge-loops like the pattern submitted by Colonel Hazen, Sixth Infantry. Two for each belt, each consisting of a strip of black bridle-leather, 7¾ inches long and 1⅞ inches wide. To one side is sewed a piece of black collar-leather, making 12 loops for carbine-cartridges, to the other side is sewed three loops for the belt, one ⅝ inch wide at each end, and one in the middle 1 inch wide; between these loops are formed eight loops for carbine-cartridges, four on each side of the center loop. Each attachment thus contains twenty cartridges in a double row of loops. To be like the drawings and patterns submitted. Cartridge-loops.

Carbine-sling of black bridle-leather, with brass buckle and tip. The dimensions and finish as at present. Carbine sling.

Carbine-sling swivel same as now prescribed, to be bright instead of blued. Carbine-sling swivel.

Saber-knot, same as now prescribed, excepting that it is to have two instead of one sliding-loop. Saber-knots.

Further, the Board is of the opinion that to the accouterments should be added a canteen of pattern and material like the sample submitted. Canteen.

RESOLUTION No. 11.

Cavalry equipments, experimental, issued, &c.

Upon the subject of the cavalry equipments, experimental, issued to certain cavalry companies, the Board finds in the examination of the reports referred to it by the Ordnance Office, that the great mass of testimony is against the brace system of belts for supporting the weight of the ammunition and arms carried by the cavalry soldier. Brace system of cavalry equipments not suitable for cavalry service.

This result is obtained after an actual trial in the field; the trooper being incommoded and restricted in his movements by the braces.

The Board is, therefore, of the opinion that they are not suitable for the cavalry service.

RESOLUTION No. 12.

Saddlers' and blacksmiths' tools.

Saddlers' and Blacksmiths' tools.

The Board is of the opinion that the tools for a company of cavalry, as now issued, should be changed to conform to the following, namely.

Saddlers' tools.

Saddlers' tools.

12 awls, stitching, assorted.
6 handles, plain, for stitching-awls.
1 handle, patent, for stitching-awls.
1 awl, seat, handled.
1 awl-stub, 2 inches long, with handle, not patent
1 awl, peg, with patent handle.
1 claw-tool.
1 compasses, common, 6-inch.
2 creasers, cut, lignum-vitæ.
1 edge-tool No. 1.
1 edge-tool No. 2.
1 gauge, draw.
1 hammer, riveting.
1 hammer, saddlers'.
1 knife, half-round, 5-inch.
1 knife, head.
2 knives, shoe.
1 knife, splitting, 6-inch.
1 mallet, head $5\frac{1}{4}$ inches long, $2\frac{3}{4}$ inches in diameter, weight 14 to 16 ounces
2 papers needles, harness, No. 4.
2 papers needles, harness, No. 5.
2 papers needles, harness, No. 6.
1 paper needles, Glover's, No. 3.
1 pair nippers, cutting.
1 oil-stone.
1 pricking-carriage, with three wheels, Nos. 7, 8, and 10.

1 punch, spring, with three points, Nos. 4, 5, and 6.
3 punches, hand, Nos. 7, 8, and 10.
1 punching block of lead, 5 by 5 inches by $\frac{7}{8}$ inch thick.
1 rule, two-foot.
1 rivet-set with two holes.
1 riveting-iron, 3 inches by 3 inches and 1 inch thick.
1 sandstone.
1 shears, 6-inch blade.
1 slicker, steel, with wooden handle.
1 screw-driver, 3-inch.
1 tickler.
2 thimbles.
1 stitching-horse for general service.
1 stitching-clamp for special service.

Smiths' tools.

1 anvil, 75 pounds.
1 buttress.
1 calipers, smiths'.
1 compasses, pair, 9-inch.
1 chisel, hot iron, handled, 1-inch edge.
1 chisel, cold iron, handled, 1-inch edge.
1 chisel, cold, $\frac{3}{4}$ inch wide.
1 chisel, cold, $\frac{7}{8}$ inch wide.
1 file, flat, bastard, 12-inch.
1 file, half-round, $\frac{1}{2}$ inch by 12-inch.
1 file, square, $\frac{1}{2}$ inch by 12 inches.
1 file, hard, smooth, 10-inch.
1 file, half-round, smooth, 6-inch.
1 file, hard, smooth, 6-inch.
1 file, bastard, flat, 6-inch.
2 files, bastard, round, 6-inch.
2 files, taper, $3\frac{1}{2}$-inch.
1 fuller, handled.
1 hammer, hand, handled.
1 hammer, riveting, small, handled.
1 hammer, riveting, large, handled.
1 hammer, set, $1\frac{1}{2}$ inches square, handled.

2 hammers, shoeing, handled.
1 hammer, sledge, 9 or 10 pounds, handled.
6 handles, file.
1 hardie, $1\frac{1}{2}$-inches face.
2 irons, clinching, plain, without hook.
2 knives, shoeing.
2 knives, toe.
1 oil-can, 6 inches long, $1\frac{1}{2}$ inches diameter.
2 punches, nail, and clinch-knife.
1 punch, round, handled, $\frac{3}{8}$ inch diameter.
1 punch, square, handled, $\frac{3}{8}$ inch.
1 punch, hand, round, $\frac{5}{16}$ inch.
1 punch, hand, round, $\frac{1}{4}$ inch.
1 punch, hand, square, $\frac{5}{16}$ inch.
1 punch, center.
2 pincers, shoeing.
1 pritchel.
8 rasps, shoeing, 14-inch.
1 screw-driver, 10-inch.
1 square-steel.
1 stock, die, and two pair dies.
1 tap-screw, $\frac{1}{2}$ to $\frac{3}{4}$ inch.
1 tap-screw, $\frac{3}{8}$ to $\frac{1}{2}$ inch.
1 tongs, No. 1, 15 inches long
1 tongs, No. 2, 15 inches long.
1 tongs, No. 3, $18\frac{1}{2}$ inches long.
1 vise, 15 pounds.
1 vise, hand.
1 wrench-screw.
1 wrench-tap.
2 aprons, leather.
1 box, shoeing, leather.
1 bucket, water, iron.
1 poker, fire.
1 shovel, fire.

Armorers' forge dispensed with.

The Board deems it proper to add a few of the tools enumerated for use in repairing arms issued to the troops, thereby rendering it unnecessary for an armorers' forge and tools to be supplied to a company of cavalry.

RESOLUTION No. 13.

Horseshoes and horseshoe-nails.

Horseshoes and horseshoe-nails.

After a careful examination of the subject of horseshoeing and horseshoes for cavalry, the Board desires to express its favorable opinion of the Goodenough shoe and system of shoeing, and its advantages for the service.

The frog and interior part of the horse's hoof are not cut away as in the system now in vogue, and the only preparation consists in trimming the outer wall of the hoof, so that the weight of the horse is partly supported by the frog. These shoes are already fitted and weigh much less than the patterns in use, and it is believed that good shoeing can be had from the indifferent mechanics usually found with the cavalry companies, and this with but little instruction. This system does not represent a new and untried idea, as it has been thoroughly tested for a number of years in the United States and in England, and the favorable reports have been received from all directions.

Goodenough horseshoes and Burden horseshoes.

The Board therefore recommends that one-half of the horseshoes issued to each cavalry company for one year shall be of the Goodenough pattern, and one-half of the pattern known as the Burden shoe; that 50 per cent. of the horseshoe-nails issued for one year to each cavalry company shall be the Goodenough horseshoe-nail, and 50 per cent. either the Globe or Ausable horseshoe-nail, and after one year the horseshoes and horseshoe-nails shall be furnished to the cavalry service of either of the above-named patterns as called for on requisitions.

Goodenough, Globe, and Ausable horseshoe-nails.

The Board recommends that models and books, as furnished by Mr. Goodenough, thoroughly explaining his system, be transmitted to each cavalry company, and, if thought necessary, that a competent person be sent to visit the larger cavalry posts for the purpose of instructing the farriers.

Size of shoes to be designated on requisitions.

The Board is of the opinion that cavalry officers should designate in their requisitions the size of the horseshoes required, as this must differ with the various breeds of horses purchased in different sections of the country; but in cases where the requisition does not mention the sizes the following should be the proportion issued, which the Board believes will cover the requirements in most cases.

Six months' supply of horseshoes for a company of cavalry.

The Board recommends to be issued to a cavalry company for a six months' supply, 1,200 horseshoes—

Of the Burden shoe, size No. 1	50 shoes.
Of the Burden shoe, size No. 2	250 shoes.
Of the Burden shoe, size No. 3	250 shoes.
Of the Burden shoe, size No. 4	50 shoes.
	600 shoes.

and 600 Goodenough horseshoes in proportion as above, and in sizes to correspond with those of the Burden pattern.

Six months' supply of horseshoe-nails for a company of cavalry.

To be issued to a cavalry company for a six months' supply, 130 pounds horseshoe-nails, 50 per cent. to be of either the Globe or Ausable pattern—

Of size No. 7	50 per cent.
Of size No. 8	50 per cent.

and 50 per cent., or 65 pounds, to be of Goodenough horseshoe-nails, in the same proportion and in sizes to correspond with the No. 7 and No. 8 of the Globe or Ausable pattern.

RESOLUTION No. 14.

Cavalry forge-cart.

Cavalry forge cart.

Resolved, That the Board recommends the adoption of a traveling forge-cart to be issued to each company of cavalry, for the purpose of carrying the blacksmiths' bellows, fire-box, anvil, coal, blacksmiths' tools, horseshoes, nails, and iron; also for the purpose of carrying the extra ammunition, saddlers' tools, and supply of leather for the repairs of horse-equipments. The size of the cart, and the different compartments and their dimensions, together with the measurements of the bellows and fire-box, to be designated in the plans and drawings submitted, and suitable harness to be furnished with each cart.

RESOLUTION No. 15.

Standard supply-table of materials.

Standard supply-table of materials.

The Board is of the opinion that the following materials should constitute a standard "supply-table" for the ordinary repairs, in a company of cavalry during a period of six months:

Saddlers' materials.

Saddlers' materials.

2 lbs. blackwax, (summer-prepared or winter-prepared, depending on the season in which it is to be used.)
½ lb. beeswax.
2 qts. blacking for leather, (in quart cans, opening closed by screw.)
4 sides leather, bridle.
100 lbs. leather, harness.
36 lbs. Collins' harness-oil, in six cans.
1 lb. rivets and burrs, copper, 1″, No. 8.
3 lbs. rivets and burrs, copper, ⅝″, No 10.
1 lb. rivets and burrs, brass, ⅜″, No. 12.
1 lb. rivets and burrs, iron, for side-lines.
1 gross screws, brass, ¾″ long, No. 6.
12 lbs. soap, castile.
2,000 tacks, iron, 6-ounce.
1,000 tacks, iron, 8-ounce.
2,000 tacks, iron, 12-ounce.
1,000 tacks, iron, 18-ounce.
2½ lbs. thread, shoe, white, No. 10.
2½ lbs. thread, shoe, white, No. 3.
1 lb. thread, linen, patent, No. 35.
12 yards webbing, blue linen, 7½″ wide.
24 yards webbing, blue linen, 4″ wide.

Blacksmiths' materials.

Blacksmiths materials.

1,200 horseshoes.
130 lbs. horseshoe-nails.

Cleaning materials.

2 quires emery-cloth, No. 90.
2 quires emery-cloth, No. 120.
2 quires emery-cloth, No. 0.0.
2 gallons oil, sperm, in 1-gallon cans.
4 lbs. rotten-stone.
With the cavalry forge-cart should be furnished:
70 lbs. iron, bar, assorted.

5 lbs. steel, 1″ square.

5 lbs. steel, $\frac{3}{4}$″ square.

To be replaced in this case when necessary by special requisition.

Additional supply-table of materials.

Additional supply-table.

The Board deems it proper to designate the following list as an additional supply-table of stores that may, under certain circumstances, be required by a company of cavalry, and which should be issued on special requisition, namely:

1 dozen buckles, bar, brass, $\frac{7}{8}$″. *reins (2) Bridle*

1 dozen buckles, bar, brass, $\frac{3}{4}$″. *Check-piece (4) Bridle* *Canteen strap 1. ?)*

3 dozen buckles, bar, brass, $\frac{5}{8}$″. *Throat-latch 2. Curbstrap 2. Bridle*

3 dozen buckles, wire, brass, $\frac{3}{4}$″. *Spur straps 2.*

2 dozen buckles, bar, iron, $1\frac{1}{8}$″. *Halter strap 1* *Crown piece Halter.* *Sometimes without*

1 dozen buckles, roller, iron, 1″. *Nose bag 1*

1 dozen buckles, roller, iron, $1\frac{1}{2}$″. *Surcingle 1*

1 dozen buckles, roller, iron, 2″.

1 dozen rings, brass, 1″.25 interior diameter. *Saddle 4*

2 dozen rings, iron, 1″.7 interior diameter. *Halter 3*

1 dozen rings, iron, 2″.5 interior diameter. *Cinch 1*

1 dozen rings, iron, "D."

1 dozen squares, iron, halter.

1 dozen bolts, iron, halter.

1 dozen staples, foot, brass. *2 Mod '79 . 4 others . on one Saddle Mod '79 = .5" high alter*

2 dozen staples for rings, brass.

2 dozen ovals, (guard-plates.) *7 Ovals 1 Shield*

1 gross pins, escutcheon, brass, $\frac{3}{4}$″ long, (screw-pins.)

1 dozen snaps, steel, (for side-lines.)

How stores on supply-table to be called for.

The Board believes that the articles on the "standard supply-table" are all that are, in kind and amount, required ordinarily by a company of cavalry during six months. It is, however, not the intention that all of these stores should in every case be supplied twice a year, but that they should be called for in part or in whole as needed by the company commanders.

Storage of horseshoes at posts.

In consideration of the bulk and weight of the horseshoes issued to a company of cavalry, and the difficulty and inconvenience of transporting the amount from place to place, the Board would suggest that the shoes be drawn as they are needed from the post ordnance officer, who might be

required to draw every six months for all of the companies of cavalry at his post. If advisable, for this purpose, the post quartermaster could be recognized as the post ordnance officer.

The articles on the additional supply-table should be called for and furnished when it may appear necessary for repairs.

Cleaning-materials.

Further, the Board is of the opinion that it is not advisable that cleaning-materials should be furnished by the Government, for the care of arms and equipments in the hands of troops, but it considers it proper that the amount specified should be allowed a company commander for the preservation of arms and equipments in store.

RESOLUTION No. 16.

Saddlers' and blacksmiths' tool-bags.

Saddlers' and blacksmiths' tool bags.

The Board is of the opinion that the tool-bags for tools and materials presented in General Orders No. 60, War Department, series 1872, should be changed as follows, namely:

The two pouches to be connected by two seat-straps, one end of each being fastened permanently to opposite pouches, the other end being attached by a brass plate and key, as in the sample submitted.

These bags to be furnished to companies without tools or materials, but to contain one leather and three canvas bags, as at present, for thread, tacks, nails, and wax. To be used upon scouts and in field service without wagons, and to carry such tools and materials from the general supplies as may be deemed necessary by the officer in command.

RESOLUTION No. 17.

Equipments necessary for a cavalry trooper.

Equipments for a cavalry trooper.

The Board is of the opinion that the regular equipments necessary for a cavalry trooper are as follows, namely:

1 saddle complete—
- 1 saddle-tree, leather covered.
- 2 stirrup-straps.
- 2 stirrups.
- 6 coat-straps.
- 1 carbine-socket and strap.
- 1 girth.

1 curb-bridle ..... { 1 head-stall. 1 pair of reins. 1 bit. 1 curb-strap.

1 halter ..... { 1 head-stall. 1 hitching-strap.

1 watering-bridle.

1 pair saddle-bags with two ration-bags.

1 blanket.

1 surcingle.

1 link.

1 side-line.

1 nose-bag.

1 lariat.

1 picket-pin.

1 horse-brush.

1 curry-comb.

1 pair spurs.

1 pair spur-straps.

1 saber-belt ..... { 2 saber-slings. 2 saber-sling slides. 1 belt and plate.

1 pouch for carbine-cartridges.

1 pouch for pistol-cartridges.

2 cartridge-loops for carbine-cartridges.

1 pistol-holster.

1 saber-knot.

1 carbine-sling.

1 carbine-sling swivel.

1 canteen.

Special articles for cavalry trooper.

Further, the Board is of the opinion that the following articles for the cavalry service should be furnished only when especially called for on requisition, namely:

Saddle-cloth, felt.

Halter-chain.

Sweat-leathers.

Stirrup with socket for standard or guidon.
Forage-sack.
Haversack for dismounted service.

RESOLUTION No. 18.

The Board recommends the adoption of the changes, alterations, and additions to the horse-equipments, cavalry equipments, accouterments, and supply-table of tools and materials for the cavalry service as set forth in the resolutions agreed upon and forming part of these proceedings.

In arriving at its conclusions, the Board has given due weight to the opinions of cavalry officers received, and have coincided with the views of the majority, excepting where reasons which appear good and convincing have induced it to take other action.

Defective saddle-trees.

Most of the saddle-trees now on hand were furnished by contractors during the war, and show a great want of uniformity in their measurements and dimensions, and often differ widely from the official gauges. In order to remedy this and prevent injury to horses the Board have selected a model, and recommend that a thorough inspection be made with a view to the condemnation of all trees improperly constructed.

Girth-fastening.

A large number advocate the cincha-strap fastening for the girth, but the Board recommends the buckle-fastening, with the modification of a ring instead of the D-ring upon the left side of the girth-strap, so that the cincha-strap can be used when circumstances may render it especially advisable. The Board believes that the saddle can be secured with the buckle-fastening as safely and more expeditiously than with any other method, and without the instruction and experience necessary with the cincha-strap.

Hair girth.

Many express themselves in favor of the hair girth, but statements made to the Board show that the material will be difficult to obtain and expensive in many parts of the country.

Shoemaker's curb-bit.

Nearly all of the cavalry officers heard from have asked for some modification of the curb-bit now in service, chiefly on account of its great weight. After examining many patterns, the Board has selected the model submitted by Capt. W. R. Shoemaker, O. S. K., of the Ordnance Department, as the curb-bit which appears to be the most meritorious, and the best adapted to

the cavalry service. In weight it is seven ounces lighter than the modified curb-bit, issued under General Orders No. 60, War Department, series 1872.

Carbine and pistol ammunition pouch.

The pouch for carrying carbine and pistol ammunition is approved by the Board, a majority of cavalry officers being decidedly in favor of this method as compared to any of the experimental cartridge-boxes issued for trial. By no other box can so large a number of cartridges be carried in the same space, but in consideration of the peculiar wants of the cavalry on the plains, in long expeditions against the Indians, the Board have recommended the addition of the cartridge-loops, to be used with or without the pouch, so arranged as to distribute the weight of a large amount of ammunition as equally as possible upon the belt. These have been tested for a long time upon the frontier, and are used now by many in that locality.

Felt saddle-cloth.

A graduated felt saddle-cloth is recommended to be issued in addition to the blanket, as a further protection to the horse's back, especially needed in long marches, when the animals become low in flesh and where the blanket alone is insufficient to prevent sores. An examination of reports made during the war and since, upon this subject, received from the Ordnance-Office, shows a very favorable result, the felt cloth having been used under trying circumstances with beneficial effect.

Cavalry-forge and tool-chest abandoned.

The cavalry-forge and tool-chest, prescribed by General Orders No. 60, War Department, series of 1872, was carefully examined and its working qualities tested.

It is the opinion of the Board that for a forge, intended to be carried on pack-animals, it is as good as any that could be devised, but the Board believes the forge and tools to be too small for the general blacksmiths' work often required in companies on the plains, and that it is not necessary to furnish forges with a view to packing them on animals.

Cavalry, leaving the garrison for a scout, usually carry fitted shoes with each trooper sufficient for all wants, and forges are only needed in garrison, established camps, or with trains. Heretofore the forge, tools, and materials, both of blacksmiths and saddlers, have been carried in separate boxes, and no provision has been made for their safe-keeping or transportation.

Cavalry forge-cart recommended.

To supply a want long felt in the cavalry service, the Board recommends the cavalry forge-cart, of the pattern submitted, with forge, tools, and materials compactly arranged and drawn by two animals, one in shafts

and the other by the side in harness, after the method long in use in the Prussian army.

In conclusion, a personal examination has convinced the Board of the superior quality of the manufacture and material of the articles furnished from the Government work-shops over those obtained by contract, and it is earnestly recommended that, as far as possible, all stores issued to the cavalry by the Ordnance Department may be made in the arsenals, believing that to be for the best interests of the service.

All cavalry stores recommended to be made in workshops of the Ordnance Department.

[First indorsement.]

WAR DEPARTMENT, ADJUTANT GENERAL'S OFFICE,
Washington, May 8, 1874.

Respectfully referred to the Acting Chief of Ordnance for remark.

E. D. TOWNSEND,
Adjutant General.

[Second indorsement.]

ORDNANCE OFFICE,
May 11, 1874.

Respectfully returned to the Adjutant General.

The recommendations of the Board are concurred in, but in carrying out the changes, alterations, and additions recommended, it is suggested that the large quantity of stores on hand of old patterns be utilized, and the changes, &c., be made as rapidly as a due regard to economy will permit.

S. V. BENÉT,
Acting Chief of Ordnance.

[Third indorsement.]

WAR DEPARTMENT, ADJUTANT GENERAL'S OFFICE,
Washington, May 13, 1874.

Respectfully referred to the General of the Army before being submitted to the Secretary of War.

E. D. TOWNSEND,
Adjutant General.

[Fourth indorsement.]

HEADQUARTERS OF THE ARMY,
Washington, D. C., May 15, 1874.

I hardly feel competent to pass judgment on the matter of cavalry equipment, and would be governed by the opinions of the cavalry officers who serve on the plains and have abundant experience. The present stock on hand could be exhausted gradually, leaving the new equipment to accumulate in store, ready for emergency, or for use after the present supply is exhausted.

W. T. SHERMAN,
General.

[Fifth indorsement.]

WAR DEPARTMENT, ADJUTANT GENERAL'S OFFICE,
Washington, May 16, 1874.

Respectfully submitted to the Secretary of War.

E. D. TOWNSEND,
Adjutant General.

[Sixth indorsement.]

MAY 20, 1874.

The Secretary of War concurs with the General of the Army and the Chief of Ordnance, that the stores on hand of old patterns should be utilized before issue of new patterns. In regard to horseshoes, however, an immediate issue is authorized of the two styles recommended by the Board.

By order of the Secretary of War:

H. T. CROSBY,
Chief Clerk.

[Seventh indorsement.]

WAR DEPARTMENT, ADJUTANT GENERAL'S OFFICE,
Washington, May 21, 1874.

Respectfully returned to the Acting Chief of Ordnance, inviting attention to the action of the Secretary of War indorsed hereon.

The General of the Army has been advised accordingly.

E. D. TOWNSEND,
Adjutant General.

APPENDIXES AND ABSTRACTS.

APPENDIX I.

List of experimental cartridge-boxes, submitted to the Board on Cavalry Equipments by the commanding officer of the Leavenworth Arsenal, pursuant to instructions of the Chief of Ordnance of the United States Army of December 24, 1873:

1 cartridge-box, A.
1 cartridge-box, B.
1 cartridge-box, D.
1 cartridge-box, F, with tin cartridge-holder.
1 cartridge-box, F, with wooden cartridge-holder.
1 cartridge-box, K.
1 cartridge-box, M, No. 1.
1 cartridge-box, M, No. 2.
1 cartridge-box. N.
1 cartridge-box, P.
1 cartridge-pouch, C.
1 cartridge-pouch, L. (Had originally a fastening like F; admits of any variety.)
1 cartridge-pouch, E.
1 cartridge-vest, H, pair, four rows of loops.

A. MORDECAI,
Captain of Ordnance, Commanding.

LEAVENWORTH ARSENAL, KANS.,
January 10, 1874.

APPENDIX II.

List of supplies furnished by the Ordnance Department for the use of the cavalry, submitted to the Board on Cavalry Equipments by the commanding officer of the Leavenworth Arsenal, pursuant to instructions of the Chief of Ordnance, United States Army, of December 16, 1873:

One set of horse-equipments, standard pattern, as per Ordnance Memoranda No. 13, consisting of

1 saddle, cavalry, leather-covered, complete.
1 bridle, curb, with bit No. 1.
1 bridle, watering.
1 halter and strap.
1 pair saddle-bags, (linen duck.)
1 surcingle.
1 brush and shoe pouch.
1 forage-sack.
1 side-line.
1 saddle-cloth.
1 pair spurs.
1 pair spur-straps.
1 ration or coffee can.
3 bits, extra, Nos. 2, 3, and 4.

One set of cavalry accouterments, altered, standard pattern, as per Ordnance Memoranda No. 13, consisting of

1 carbine-cartridge pouch.
1 pistol-cartridge pouch.
1 pistol-holster, (breech-loading pistol, cal. .50,) swivel attachment.
1 saber-belt, cavalry.
1 saber-belt plate, (U. S.)
1 pair saber-slings, with hooks.
1 carbine-sling and swivel.
1 saber-knot

Three sets of cavalry equipments, brace system, consisting of

2 braces, No. 1.
1 brace, No. 2.
2 saber-belts and plates, No. 1.
1 saber-belt and plate, No. 2.
1 cartridge-box, No. 1.
1 cartridge-box, No. 2.
1 cartridge-pouch.

3 cartridge-pouches, pistol.
3 pistol-holsters.
3 sword-knots.
3 carbine-swivels.

One cavalry forge, with tools and materials, consisting of

1 forge-chest.
1 tool-chest.
1 bucket, iron.
1 anvil and block.
1 vise.
1 tongs.
1 poker.
1 fire-shovel.
1 rake, fire.
1 apron, smiths'.
1 die-stock, with two taps and two pairs dies.
1 box, shoeing.
1 rasp, smiths'.
1 hammer, hand.
1 hammer, shoeing.
1 hammer, riveting.
1 hammer, nail.
1 chisel, splitting.
1 pritchel.
1 hardie.
1 caliper.
1 clinching-iron.
1 knife, shoeing.
1 knife, toe.
1 punch, fore.
1 creaser.
1 buttress.
1 wrench-screw.
2 nail-bags.
1 oil-can with oil.

3 files.
1 pincers, shoeing.
1 square-steel.
1 punch, nail.
10 pounds nails, horseshoe.
1 tool-bag, for saddlers' and smiths' tools.

One set of saddlers' tools, consisting of

9 awls, assorted, without handles.
3 awls, assorted, with handles.
1 awl, pad or seat, handled.
2 peg or stub awls, with patent handles.
1 stitching-awl handle, patent.
1 claw-tool.
1 creaser, lignum-vitæ.
1 compasses, common.
2 edge-tools, Nos. 1 and 2.
1 gauge-knife, draw.
1 hammer, riveting.
1 hammer, saddlers'.
1 knife, shoe.
1 knife, half-round, 5-inch.
1 knife-head.
1 knife, splitting, 6-inch.
1 mallet, half-pound head.
3 papers of needles, Nos. 4, 5, and 6.
1 paper of needles for patent thread, Glover's, No. 5.
1 nippers, cutting.
1 oil-stone.
1 pricking-carriage, with three wheels, Nos. 8, 10, and 12.
1 punch, spring, Nos. 4 and 7.
1 punch, hand, No. 8.
1 pliers.
1 rule, two-foot.
1 pair rivet-sets, (one center, one heading.)
1 shears, 6-inch blade.

1 slicker, steel, wooden handle.
1 screw-driver, 3-inch.
1 thimble.

Smiths' tools, &c.

10 horseshoes, Nos. 2 and 3.
3 pounds horseshoe-nails.
1 hammer, shoeing.
1 pincers, shoeing.
1 rasp.
1 pritchel.
1 nail-punch and clinch-knife.
1 toe and shoeing knife.
1 clinching-iron.
1 apron, leather.

Materials.

1 ball shoe-thread, dark-blue, No. 3.
1 ball shoe-thread, white, No. 3.
1 ball shoe-thread, white, No. 10.
1 spool patent linen-thread, 3-cord, No. 50.
1 paper tacks, (1,000,) 6-ounce.
1 paper tacks, (1,000,) 12-ounce.
1 ounce beeswax.
¼ pound blackwax.
3 pounds harness-leather, strap.

Pertaining to a six months' supply.

1 pound shoe-thread, white, No. 10.
1 pound shoe-thread, white, No. 3.
1 pound shoe-thread, dark-blue, No. 3.
¼ pound patent linen-thread, 3-cord, one ball yellow.
¼ pound patent linen-thread, 3-cord, one ball orange.
¼ pound patent linen-thread, 3-cord, one ball black.
¼ pound patent linen-thread, 3-cord, one ball white.
2 ounces patent linen-thread, 3-cord, one spool white, No. 50.
2 ounces patent linen-thread, 3-cord, one spool blue, No. 35.

2 ounces patent linen-thread, 3-cord, one spool black, No. 35.
2 ounces patent linen-thread, 3-cord, one spool red, No. 35.
2 papers (1,000) iron tacks, 6-ounce.
2 papers (1,000) iron tacks, 12-ounce.
½ pound beeswax.
2 pounds black wax.
1 side of bridle-leather.
15 pounds of harness-leather, (one side.)
8 pounds of collar-leather, (one side.)
1 pound copper rivets and burrs, ¾-inch, No. 10.
1 pound copper rivets and burrs, ¾-inch, No. 12.
592 pounds horseshoes, Burden's, No. 2.
695 pounds horseshoes, Burden's, No. 3.
25 pounds horseshoe-nails, Ausable, No. 7.
35 pounds horseshoe-nails, Ausable, No. 8.

Horse-equipments, pattern 1859.

1 saddle, raw-hide covered, No. 1, 11-inch seat.
1 saddle, raw-hide covered, No. 2, 11½-inch seat.
1 saddle, raw-hide covered, No. 3, 12-inch seat.
1 pair stirrups, wood, with hood.
1 pair stirrup-leathers.
6 coat-straps.
1 carbine-socket.
1 girth, 4½-inch, woolen webbing, blue.
1 curb-bridle, headstall, and reins, with curb-bit No. 4, curb-chain and safe.
1 curb-bit, No. 3.
1 curb-bit, No. 2.
1 curb-bit, No. 1, 4-inch diameter of ring.
1 curb-bit, No. 1, 3¾-inch diameter of ring.
1 watering-bridle, bit, and reins.
1 halter and strap.
1 pair saddle-bags, leather.
1 saddle-blanket, blue.
1 surcingle, 3-inch, woolen webbing, blue.
1 pair spurs, rough finish.

1 pair spur-straps.
1 curry-comb.
1 horse-brush.
1 picket-pin.
1 lariat.
1 nose-bag.

Cavalry accouterments.

1 saber-belt and plate, with two slings and shoulder-belt, grained leather.
1 saber-belt and plate, with two slings and shoulder-belt, buff leather.
1 carbine-cartridge pouch, Dyer's.
1 carbine-cartridge pouch sling, Dyer's.
1 carbine-cartridge pouch sling swivel
1 carbine-cartridge box, Sharp's.
1 carbine-sling, grained leather.
1 carbine-sling, buff leather.
1 carbine-sling swivel.
1 pistol-belt holster.
1 pistol cartridge-pouch.
1 saber-knot, grained leather
1 saber-knot, buff leather.
1 saber-belt and plate, with Stuart's attachment.
1 side-line, leglet with lining.
1 side-line, leglet plain strap, chain 25½ inches long.
1 side-line, leglet plain strap, chain 28½ inches long.
1 side-line, leglet plain strap, chain 31 inches long.
3 lariats, extra, different sizes and materials.
1 pair stirrups, wood, without hood.
1 pair sweat-leathers.
1 saddle, leather-covered, complete, converted at the Leavenworth Arsenal; differs from the standard in size of safes to D-rings and in welts on cantle and pommel.
1 cartridge-box, M pair, with shoulder-straps.
1 cartridge-vest, H, three rows of loops.
1 cartridge-pouch, L, with turn-buckle.
1 haversack, painted canvas.
1 haversack, enameled cloth.

1 canteen and strap.
4 pairs saddler-clamps, different patterns.
1 saddlers' horse.
1 saddlers' tool-box.
1 saddlers' tool-pouch.
1 bit, nickel-plated, experimental.
1 saddle-cloth, felt, experimental.
6 pounds Collins' prepared harness-oil.

Sample patterns.

2 horseshoes, fore, Burden's, No. 1.
2 horseshoes, hind, Burden's, No. 1.
2 horseshoes, fore, Burden's, No. 2.
2 horseshoes, hind, Burden's, No. 2.
2 horseshoes, fore, Burden's, No. 3.
2 horseshoes, hind, Burden's, No. 3.
2 horseshoes, fore, Burden's, No. 4.
2 horseshoes, hind, Burden's, No. 4.
2 horseshoes, fore, Burden's, No. 5.
2 horseshoes, hind, Burden's, No. 5.
2 horseshoes, fore, Rhode Island, No. 2.
2 horseshoes, hind, Rhode Island, No. 2.
2 horseshoes, fore, Rhode Island, No. 3.
2 horseshoes, hind, Rhode Island, No. 3.
2 horseshoes, fore, Rhode Island, No. 4.
2 horseshoes, hind, Rhode Island, No. 4.
2 horseshoes, fore, Corning & Winslow, No. 3.
2 horseshoes, hind, Corning & Winslow, No. 3.
2 horseshoes, fore, Juniata, No. 3.
2 horseshoes, hind, Juniata, No. 3.
2 horseshoes, fore, Colwell, No. 3.
2 horseshoes, hind, Colwell, No. 3.
2 horseshoes, fore, Unknown, No. 3.
2 horseshoes, hind, Unknown, No. 3.
2 horseshoes, fore, Burden's, No. 3, fitted.
2 horseshoes, hind, Burden's, No. 3, fitted.

1 pound horseshoe-nails, Globe, bright, No. 6.
1 pound horseshoe-nails, Globe, bright, No. 7.
1 pound horseshoe-nails, Globe, bright, No. 8.
1 pound horseshoe-nails, Globe, bright, No. 9.
1 pound horseshoe-nails, Ausable, No. 6.
1 pound horseshoe-nails, Ausable, No. 7.
1 pound horseshoe-nails, Ausable, No. 8.
1 pound horseshoe-nails, Ausable, No. 9.
1 pound horseshoe-nails, rusty.

Specimens.

10 rasps, different patterns.
3 shoeing-knives, different patterns.
6 clinching-irons, different patterns.
1 slicker, glass.
1 slicker, glass, with wooden handle.
1 slicker, wood.

A. MORDECAI,
Captain of Ordnance, Commanding.

LEAVENWORTH ARSENAL, *January* 10, 1874.

APPENDIX III.

List of patterns submitted to the Board on Cavalry Equipments, not shown in Appendix I and Appendix II:

3 samples officers' sabers, from Ordnance Office.
1 cartridge-box, patented by Lieutenant McKeever, from Ordnance Office.
1 scouting-belt, with loops, from Captain Bernard, First Cavalry.
2 waist-belts and plates, with loops, from Colonel Mordecai, Ordnance Department.
1 scouting-belt, with loops, from Capt. E. B. Wells, Second Cavalry.
3 bridles, made by James H. Wilson, Nashville, from Ordnance Office.
1 watering-bridle, from Ordnance Office.
1 bridle, from Ordnance Office.
1 model of curb-bit, from Captain Spaulding, Second Cavalry.
1 drawing of curb-bit, from Major DuBois, Third Cavalry.

2 models of curb-bit, from Capt. W. R. Shoemaker, M. S. K. O.
1 drawing of curb-bit, from Capt. H. E. Noyes, Second Cavalry.
1 pair of hopples, Colonel Palmer's, from Ordnance Office.
1 pair of side-lines, Colonel Palmer's, from Ordnance Office.
1 pair of side-lines, from Major Merrill, Seventh Cavalry.
1 pair of side-lines, from Col. N. A. Miles, Fifth Infantry.
1 pair of side-lines, from Ordnance Office.
1 pair of side-lines, from Colonel Mordecai, made by request of Board.
2 pairs of side-lines, from Colonel Mordecai.
1 picket-pin, from William Lyon.
1 picket-pin, from Captain Spaulding, Second Cavalry.
1 picket-pin, from Capt. H. E. Noyes, Second Cavalry.
1 picket-pin, from Lieut. W. C. Rawolle, Second Cavalry
1 model of picket-pin, from Capt. C. B. McLellan, Sixth Cavalry
1 sweat-leather, model from Captain Spaulding, Second Cavalry
1 lariat, from Major Merrill, Seventh Cavalry.
1 lariat, from Capt. H. E. Noyes, Second Cavalry.
1 hair-lariat, from Colonel Mordecai, Ordnance Department.
1 cavalry carrying-braces, from Lieut. George H. Palmer, Sixteenth Infantry.
1 drawing of Kiernan's horseshoe, from Col. B. H. Grierson, Tenth Cavalry.
2 curry-combs, from Major Merrill, Seventh Cavalry.
1 curry-comb, No. 18, from Colonel Mordecai, Ordnance Department.
1 curry-comb, No. 480, from Colonel Mordecai, Ordnance Department.
1 horse-brush, No. 101, from Colonel Mordecai, Ordnance Department.
1 horse-brush, No. 401, from Colonel Mordecai, Ordnance Department.
1 felt saddle-cloth, gray, from Colonel Mordecai, Ordnance Department.
1 felt saddle-cloth, gray, bound yellow, from Colonel Mordecai, Ordnance Department.
1 felt saddle-cloth, blue, bound yellow, from Colonel Mordecai, Ordnance Department.
1 felt saddle-cloth, blue, from Colonel Mordecai, Ordnance Department.
1 pistol-holster, from Capt. H. E. Noyes, Second Cavalry.
2 hair cinchas, from Colonel Mordecai, Ordnance Department.
1 pair of saddle-bags, from Colonel Mordecai, Ordnance Department.

1 pair of California saddle-bags, from Colonel Mordecai, Ordnance Department.
2 pairs of back-straps, from Colonel Mordecai, Ordnance Department.
4 cincha-straps, from Colonel Mordecai, Ordnance Department.
1 Wait's feed-bag, from Colonel Mordecai, Ordnance Department.
1 feed-bag from American Horse-Feeder Company, from Ordnance Office.
1 Homes' belly-band fastener, from Ordnance Office.
1 G. W. Barnes' pulley bridle-bit, from Ordnance Office.
1 Hazen's cartridge-belt, No. 1, single row of loops, from Colonel Mordecai.
1 Hazen's cartridge-belt, No. 2, double row of loops, from Colonel Mordecai.

ABSTRACT A.—*Abstract of recommendations by cavalry officers upon the subject of the saddlers' and blacksmiths' tools and the supply-table for materials, contained in reports to the Chief of Ordnance, referred to the Board on Cavalry Equipments, in the communication dated December 24, 1873, appended to proceedings and marked Appendix No. 1.*

Names of officers.	Regiment.	Station.	Date.	Changes recommended in supplies, differing from the allowances laid down in General Orders No. 60, Adjutant General's Office, series 1872. Saddlers' tools.							
				Handles for awls, assorted.	Awl-handles.	Awl-handles, patent.	Claw-tools.	Creasers, lignum-vitæ.	Edge-tools.	Knives, shoe.	Needles, papers of
Col. J. J. Reynolds	Third Cavalry, commanding	Fort McPherson, Nebr	Apr. 15, 1873	6	4	5	3	4	(*)	3	(†)
Col. James Oakes	Sixth Cavalry, commanding	Fort Riley, Kans	Apr. 8, 1873	.....	.....	.....	.....	.....	.....	.....	.....
Lieut. Col. E. A. Carr	Fifth Cavalry, commanding	Camp Lowell, Ariz. Ter	June 6, 1873	.....	.....	2	.....	2	.....	2	.....
Lieut. Col. J. W. Davidson	Tenth Cavalry, commanding	Fort Sill, Indian Ter	June 5, 1873	.....	.....	.....	.....	.....	.....	.....	.....
Col. J. Irwin Gregg	Eighth Cavalry, commanding	Fort Union, N. Mex	Apr. 4, 1873	.....	.....	.....	.....	.....	.....	.....	.....
Col. Edwin Hatch	Ninth Cavalry, commanding	Ringgold Barracks	Apr. 30, 1873	.....	.....	.....	.....	.....	.....	.....	.....
Capt. Clarence Mauck	Fourth Cavalry	Fort Clark, Tex	Apr. 16, 1873	.....	.....	.....	.....	.....	.....	.....	.....
Capt. A. E. Bates	Second Cavalry	West Point, N. Y	Mar. 25, 1873	.....	.....	.....	.....	.....	.....	.....	.....

* Two of No. 1, two of No. 2, and four of No. 4. † Three of No. 4, three of No. 5, three of No. 6, six of Nos. 2 and 3.

ABSTRACT A.—*Abstract of recommendations by cavalry officers, &c.*—Continued.

Names of officers.	Changes recommended in supplies differing from the allowance laid down in General Orders No. 60, Adjutant General's Office, series 1872. Saddlers' tools.																		
	Needles for patent thread, papers of.	Oilstones.	Pricking-carriage with wheels.	Punches, spring.	Punches, hand.	Pliers, pairs.	Slicker, glass.	Screw-driver.	Collar-palm and needle.	French edge-tool No. 3.	French edge-tool Nos. 4 and 6.	Patent-leather gauge.	Patent-leather compasses.	Rounding-machine, three holes.	Stitching-horse.	Chaudling-tool.	Rounding-iron.	Splitting-gauge.	Gauge-knife for rounds.
Col. J. J. Reynolds	(*)	3	(†)	(‡)	(§)	3	1	(‖)	1	1	2	1	1	1	1	1	1	1	1
Col. James Oakes	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Lieut. Col. E. A. Carr	.....	.....	.....	.....	(¶)	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....
Lieut. Col. J. W. Davidson	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Col. J. Irwin Gregg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Col. Edwin Hatch	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Capt. Clarence Mauck	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Capt. A. E. Bates	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

* One of No. 5 and one of No. 3.
§ One of Nos. 4 to 7, one of Nos. 9 to 12.
† One each of 6 to 18.
‖ One 3-inch one 6-inch.
‡ Four of 1, 2, 3, and 5.
¶ One of No. 6.

ABSTRACT A.—*Abstract of recommendations by cavalry officers, &c.*—Continued.

Names of officers.	Changes recommended in supplies differing from the allowance laid down in General Orders No. 60, Adjutant General's Office, series 1872.																
	Saddlers' tools.					Saddlers' materials.											
	Spring-punch with six assorted nipples.	Awls, pad or seat.	Hammers, saddlers', with claw.	Sandstone.	Rules, patent.	Tacks.	Beeswax, pounds of.	Blackwax, pounds of.	Emery cloth, sheets.	Sweet oil, gallons.	Emery, pounds of.	Needles for patent thread, papers of.	Copper rivets and burrs, pounds of.	Neats-foot oil, gallons.	Patent-leather thread, pounds of.	Oil-can.	Roller-buckles.
Col. J. J. Reynolds	1					(*)	1½	1					(†)	2	2	1	(‡)
Col. James Oakes									125	2	5		5	5			
Lieut. Col. E. A. Carr		2	1	1	1							2					
Lieut. Col. J. W. Davidson																	
Col. J. Irwin Gregg																	
Col. Edwin Hatch									120					5			
Capt. Clarence Mauck													10				
Capt. A. E. Bates																	

* Three thousand of Nos. 6 and 12; five thousand of No. 18. † Five pounds, assorted. ‡ One hundred and fifty, assorted.

ABSTRACT A.—*Abstract of recommendations by cavalry officers, &c.*—Continued.

Names of officers.	Changes recommended in supplies differing from the allowance laid down in General Orders No. 60, Adjutant General's Office, series 1872.																
	Saddlers' materials.										Smiths' tools.							
	Horseshoe-buckles.	Girth-rings.	Webbing, blue, 3-inch.	Halter rings, squares, and bars.	Carver.	Bar-buckles, iron.	Half-round buckles, ⅝ inch.	Bridle-leather, pounds of.	Harness-leather, pounds of.	Collar-leather, pounds of.	Shoeing-hammers.	Shoeing-pincers.	Shoeing-rasps.	Pritchels.	Toe-knives.	Leather aprons.	Three-cornered files.	Small vise.
Col. J. J. Reynolds	(*)	(*)	†3	100	1	50	75	40	65		3	3	19	3	3	3	3	1
Col. James Oakes			(*)					100	100	35								
Lieut. Col. E. A. Carr				24		24	24	25	50									
Lieut. Col. J. W. Davidson								20	30									
Col. J. Irwin Gregg								50	100									
Col. Edwin Hatch								25	60									
Capt. Clarence Mauck								25										
Capt. A. E. Bates																		

* Sufficient quantity. † Yards.

ABSTRACT A.—*Abstract of recommendations by cavalry officers, &c.*—Concluded.

Names of officers.	Changes recommended in supplies differing from the allowances laid down in General Orders No. 50, Adjutant General's Office, series 1872.							Remarks.
	Smiths' tools.					Smiths' materials.		
	Hand-hammer.	Farriers' knives.	Tongs, pairs.	Tongs, clinching, pairs.	Half-round hardy.	Horseshoes Nos. 2 and 3, pounds of.	Horseshoe-nails, pounds of.	
Col. J. J. Reynolds	1	2	2	2	1	1,500	90	
Col. James Oakes								Thinks that the entire supply should be regulated by the exigencies of the service alone and not by any fixed allowance.
Lieut. Col. E. A. Carr								
Lieut. Col. J. W. Davidson								Thinks the present allowance of tools sufficient.
Col. J. Irwin Gregg								
Col. Edwin Hatch								Recommends that lard-oil, lamp-black, tripoli, and assorted buckles be added to the supply-table.
Capt. Clarence Mauck								Reports present allowance of leather entirely insufficient.
Capt. A. E. Bates								Recommends the issue of additional straps and halters to save expenditure of leather.

L. H. CARPENTER,
Captain Tenth Cavalry, Brevet Colonel,
Recorder of Board on Cavalry Equipments.

ABSTRACT B.—*Summary of the contents of certain letters referred to the Board on Cavalry Equipments, in the communication from the Ordnance Department, dated December* 24, 1873, *marked Appendix No.* 1.

1. Letter from Maj. R. I. Dodge, Third Infantry, commanding Fort Dodge, Kansas, (5885 of 1873,) dated November 3, 1873, transmits reports of scouts of companies F and G, Sixth Cavalry, with criticisms on arms and equipments.

[Inclosure 1 to letter 5885 of 1873.]

Joseph Kerin, Captain Sixth Cavalry, commanding Company F, October 6, 1873, reports scouts made by Company F, Sixth Cavalry, from April 28, 1873, to October 6, 1873.

[Extracts from remarks therein.]

* * * The new cavalry equipments were first worn by men of the company on scouting duty, on the scout of June 25 to July 14, 1873. Lieutenant Henely in charge of this scouting party, on the same, dated July 14, says: "The men of the detachment disliked very much the new belts and carbine-slings furnished them recently; they complain that they are cumbersome, are composed of so much leather as to make them feel exceedingly warm, and chafed the shoulders to such an extent, in many instances, that they cannot be worn at all.

[Inclosure 2 to letter 5885 of 1873.]

T. C. Tupper, Captain Sixth Cavalry, commanding Company G, Sixth Cavalry, October, 1873, reports scouts made by Company G, Sixth Cavalry, from March 13, 1873, to October 18, 1873.

[Extracts from remarks therein.]

* * * The carbine-sling belt in use is satisfactory; the cartridge-boxes are unfit for field use. I recommend the cartridge-pouch lined with sheep-skin. The leather-covered saddles are the best I have seen in use in the service. * * * The bridle-bits now in use I consider outrageous; they are uniformly too heavy. * * * I recommend the Daniels' steel bit, with curb-straps in place of curb-chain. * * *

2. Letter from J. T. Morrison, First Lieutenant, Tenth Cavalry, (No. 5736 of 1873,) dated October 24, 1873, requests that certain blankets advertised to be sold be withdrawn from sale and issued as horse-covers, there being none for issue.

The original documents returned by request to Chief of Ordnance.

L. H. CARPENTER,
Captain Tenth Cavalry, Brevet Colonel,
Recorder of Board on Cavalry Equipments.

ABSTRACT C.—*Abstract of opinions of cavalry officers on the cavalry equipments, experimental.*

Number.	Names of officers.	Rank.	Company.	Regiment.	Station.	Braces, experimental.		Holster-attachment, experimental.		Saber-slings, experimental.		Pistol-cartridge pouch, present pattern.		Which cartridge-box preferred for field.	Which cartridge-box preferred for garrison.	Separate sling for carbine.		Nose-bags.		Number of times the cavalry equipments were in actual service.
						In favor of.	Against.	In favor of.	Against.	In favor of.	Against.	In favor of.	Against.			In favor of.	Against.	In favor of.	Against.	
1	Henry Wagner	Captain	C	First Cavalry	Camp McDermit, Nev								1	Box No. 1	Box No. 1		1		1	29
2	R. F. Bernard	do	G	do	Camp Bidwell, Cal									Box No. 2	Box No. 2				1	13
3	F. K. Upham	Lieutenant	L	do	Camp Apache, Ariz		1		1	1				Box No. 1	Box No. 1	1			1	70
4	Moses Harris	Captain	M	do	Fort Walla-Walla, Wash		1		1	1					do	1				133
5	Thomas B. Dewees	do	A	Second Cavalry	Medicine Bow, Wyo		1	1			1	1		Pouch	Pouch	1				16
6	E. R. Wells	do	E	do	Fort Laramie, Wyo		1		1	1			1	do	Box No. 2	1		1		120
7	H. E. Noyes	do	I	do	Fort Sanders, Wyo		1		1					Belt		1			1	3
8	John Mix	do	M	do	Omaha Barracks, Nebr		1		1	1			1	Pouch	Box No. 1	1		1		184
9	William Hawley	do	A	Third Cavalry	Sidney Barracks, Nebr		1	1			1			Belt	Box No. 2	1			1	16
10	John P. Walker	First Lieut	A	do	do	1				1				Pouch	Box No. 1		1	1		13
11	Charles Meinhold	Captain	B	do	Fort McPherson, Nebr		1		1	1			1	Belt	Box No. 2	1		1		66
12	F. Van Vliet	do	C	do	Fort Fetterman, Wyo		1		1		1	1		do	Box No. 1	1				
13	P. D. Vroom	First Lieut	C	do	do							1				1				
14	Guy V. Henry	Captain	D	do	Laramie River, Wyo		1		1		1		1	Belt	Belt	1		1		60
15	Deane Monahan	do	G	do	Fort D. A. Russell, Wyo		1			1			1	do	Box No. 1				1	14
16	A. D. King	First Lieut	I	do	Fort McPherson, Nebr		1							Box No. 2	Box No. 2	1			1	20
17	Clarence Mauck	Captain	B	Fourth Cavalry	Fort Clark, Tex		1		1		1	1				1		1		
18	D. Madden	do	C	do	Camp near Wichita, Kans	1		1		1			1	Pouch	Pouch	1		1		6
19	William O'Connell	do	M	do	Fort Duncan, Tex		1		1		1		1	do					1	88
20	C. E. Nesmith	do	A	Sixth Cavalry	Camp Borthwick		1		1		1	1		do	Box No. 1	1		1		10
21	S. M. Whitside	do	B	do	Fort Hays, Kans		1		1		1			do	Pouch	1		1		20
22	C. G. Gordon	First Lieut	E	do	Fort Gibson, Indian Ter		1		1		1	1		do	Box No. 1	1		1		145
23	Joseph Kerin	Captain	F	do	Fort Dodge, Kans		1		1		1			do	do	1			1	77
24	W. M. Wallace	First Lieut	H	do	do		1	1		1		1		do	Box No. 2	1		1		84
25	A. R. Chaffee	Captain	I	do	Camp Supply, Indian Ter		1	1				1		do	Box No. 1	1		1		60
26	William Harper, jr	First Lieut	K	do	do		1	1			1	1		do	Pouch	1		1		20
27	C. B. McLellan	Captain	L	do	Near Fort Hays, Kans		1		1		1			do	do	1		1		85
28	V. K. Hart	do	C	Seventh Cavalry	Fort Rice, Dak		1		1		1		1	do	Box No. 1	1		1		210
29	F. W. Benteen	do	H	do	Camp near Fort Rice, Dak		1		1		1		1	do	Pouch	1		1		220
30	M. W. Keogh	do	I	do	In the field, Dakota		1		1		1		1	do	do	1		1		114
31	William McCleave	do	B	Eighth Cavalry	Pingatoire River, Colo		1		1		1	1		Belt		1		1		37
32	A. P. Caraher	do	F	do	Fort Garland, Colo		1		1		1	1		Pouch	Box No. 1	1		1		136
33	Charles Hobart	do	L	do	Canadian River		1	1		1		1		do	do	1		1		112
34	Michael Cooney	do	A	Ninth Cavalry	Fort Concho, Tex		1		1	1				Belt	Box No. 2	1			1	44

35	C. D. Beyer	do	C	do	Santa Maria, Tex		1		1		1	1				1				90
36	F. S. Dodge	do	D	do	Fort Stockton, Tex		1	1		1		1		Pouch	Box No. 1	1			1	113
37	J. L. Humfreville	do	K	do	Fort Brown, Tex		1				1			do	Pouch	1				90
38	Nicholas Nolan	do	A	Tenth Cavalry	Fort Concho, Tex		1		1		1		1	Belt	Box No. 1	1			1	102
39	L. H. Carpenter	do	H	do	Fort Sill, Indian Ter		1		1	1		1		Pouch	do	1			1	27
40	T. A. Baldwin	do	I	do	Fort Richardson, Tex		1		1		1	1		do	do	1		1		30
41	C. H. Carlton	do	K	do	Fort Sill, Indian Ter		1		1	1				do	Pouch	1				33
42	Thomas Little	do	L	do	Fort Richardson, Tex		1		1		1	1		do	Box No. 1	1			1	42
43	S. T. Norvell	do	M	do	Fort Sill, Indian Ter		1	1		1		1		do	Pouch	1		1		60
	Summary					2	38	9	27	15	22	18	12			39	2	22	14	2,812

Number of officers in favor of pouch for field-service	26	Number of officers in favor of pouch for garrison-service	10
Number of officers in favor of scouting-belt for field-service	9	Number of officers in favor of belt for garrison-service	1
Number of officers in favor of box No. 1 for field-service	2	Number of officers in favor of box No. 1 for garrison-service	19
Number of officers in favor of box No. 2 for field-service	2	Number of officers in favor of box No. 2 for garrison-service	7

The original papers referred to in this abstract were returned, by request, to the Chief of Ordnance.

L. H. CARPENTER,
Captain Tenth Cavalry, Brevet Colonel,
Recorder of the Board on Cavalry Equipments.

ABSTRACT D.—*Abstract of reports of officers upon the experimental cartridge-boxes issued for trial.*

Names of officers.	Rank.	Company.	Regiment.	Station.	What kind of cartridge box or pouch in actual use.	What kind of cartridge box or pouch preferred.	Time the cartridge-boxes reported upon were in actual service.
Thomas McGregor	Captain	A	First Cavalry	Camp McDowell, Ariz	Boxes marked C, E, F, K, L, N, P	Pouch E	20 months.
C. C. C. Carr	do	I	do	Camp Verde, Ariz	Boxes marked C, I, L, I, K, N, P	Old regulation pattern	8 months.
Randolph Norwood	First lieutenant	B	Second Cavalry	Camp Stambaugh, Wyo	Old regulation pattern and belt	Scouting-belt	1 month.
James N. Wheelan	do	B	do	Fort Bridger, Wyo	Old regulation pattern	do	3 months.
Frank U. Robinson	Second lieutenant	B	do	Camp Stambaugh, Wyo	do	do	1 month.
E. J. Spaulding	Captain	C	do	Camp Cameron, Nebr	do		17 months.
Alex. Sutorius	do	E	Third Cavalry	Fort Sanders, Wyo	do	Pouch E	1 month.
Alex. Moore	do	F	do	Fort McPherson, Nebr	do	Scouting-belt	4 months.
A. D. B. Smead	First lieutenant	F	do	do	do	do	Do.
Thomas L. Brent	Captain	L	do	Fort D. A. Russell, Wyo	do	do	2 months.
Anson Mills	do	M	do	North Platte, Nebr	do	do	1 month.
Wirt Davis	do	F	Fourth Cavalry	Fort Griffin, Tex	Old regulation pattern and pouches	Pouch E	3 months.
Edw. M. Heyl	do	K	do	Fort Richardson, Tex	Old regulation pattern	do	11 months.
A. E. Woodson	First lieutenant	A	Fifth Cavalry	Camp Verde, Ariz	do	Old regulation pattern	5 months.
S. S. Sumner	Captain	D	do	Camp Bowie, Ariz	Old regulation pattern and pouches	do	4 months.
John A. Irwin	do	D	Sixth Cavalry	Fort Wallace, Kans	do	Pouch E	1 month.
C. B. McLellan	do	L	do	Fort Dodge, Kans	Old regulation pattern	do	2 months.
Sheldon Sturgeon	do	H	do	Fort Hays, Kans	Old regulation pattern and pouches	Field—Pouch E Garrison—Old regula'n pat'n	1 month.
Michael Cooney	do	A	Ninth Cavalry	Fort Concho, Tex	do	Scouting-belt	3 months.
F. S. Dodge	do	D	do	Fort Stockton, Tex	Old regulation pattern	Pouch E	Do.
Ed. S. Meyer	do	L	do	Fort Duncan, Tex	Boxes marked C, E, L, M, Vests H	do	6 months.
E. D. Dimmick	First lieutenant	L	do	Fort McIntosh, Tex	do	do	3 months.
Francis Moore	Captain	L	do	do	do	Old regulation pattern	2 months.

Number of officers in favor of pouch E 10
Number of officers in favor of scouting-belt 8
Number of officers in favor of old regulation pattern 5

The above abstract is compiled from reports made to the Ordnance Department, and referred to the Board on Cavalry Equipments.

L. H. CARPENTER,
Captain Tenth Cavalry, Brevet Colonel,
Recorder of Board on Cavalry Equipments.

ABSTRACT E.—*Abstract of opinions of officers upon nickle-plated bits and felt saddle-cloths, contained in reports referred by the Ordnance Department to the Board on Cavalry Equipments.*

Names of officers.	Rank.	Company.	Regiment.	Station.	Nickle-plated bits.		Felt saddle-cloth.		Time the articles were in actual service.
					In favor of.	Against.	In favor of.	Against.	
James Eagan	Captain	K	Second Cavalry	North Platte, Nebr	1				9 months.
H. E. Davis	Brigadier-general		Volunteers	In field during the war				1	
H. S. Stull	Captain and ordnance officer		Third Cavalry Division, volunteers				1		16 months.
D. R. Clendenin	Lieutenant-colonel		Eighth Illinois Cavalry, volunteers				1		3 months.
Sebree Smith	First lieutenant	L	Sixth Cavalry	Fort Riley, Kans	1				9 months.
W. A. Corrie	Lieutenant-colonel		Eighth Pennsylvania Cavalry	In field during the war			1		
A. Wilson	Lieutenant	K	Twenty-fifth New York Cavalry, volunteers.				1		5 months.
Henry G. Wood	First lieutenant	G	do				1		Do.
W. P. Robeson	Brevet colonel		Third New Jersey Cavalry, volunteers.				1		4 months.
S. E. Chamberlin	Captain	K	Twenty-fifth New York Cavalry, volunteers.				1		5 months.
S. N. McPherson	Major		do				1		4 months.
A. M. Randol	Colonel		Second New York Cavalry, volunteers.				1		7 months.
J. Hall	do		First Vermont Cavalry, volunteers				1		4 months.
M. H. Blynn	Major		Tenth New York Cavalry, volunteers.					1	
S. B. M. Young	Colonel		Fourth Pennsylvania Cavalry, volunteers.				1		
Robert Bell	Major		Twenty-first Pennsylvania Cavalry, volunteers.					1	
I. A. Tompkins	General of		Artillery volunteers				1		36 months.
E. W. Merchand	First lieutenant		Twenty-fifth New York Cavalry, volunteers.				1		5 months.
Summary					2		13	3	

L. H. CARPENTER,
Captain Tenth Cavalry, Brevet Colonel,
Recorder of Board on Cavalry Equipments.

ABSTRACT F.—*Abstract of recommendations of cavalry officers in relation to the saddlers' and blacksmiths' tools and supply table of materials, as compared with the quantity issued under General Orders No. 60, War Department, series 1872. Compiled from communications made to the Board on Cavalry Equipments, and appended to its proceedings.*

Number appended to abstract and marked.	Names of officers.	Rank.	Regiment.	Company.	Station.	SADDLERS' TOOLS.												
						Awls, assorted, with three handles.	Scratch-awls.	Collar-palm.	Knives, shoe.	Needles, papers of.	Needles for patent thread.	Punches, spring	Punches, hand.	Sandstone.	Slicker, glass.	Screw-driver.	Files, three-cornered.	Sailmakers' needles, papers of.
1	Gerald Russell	Captain	Third Cavalry	K	Fort McPherson, Nebr													
2	Henry E. Noyes	do	Second Cavalry	I	Fort Sanders, Wyo	15	1	1	2	1 of 2 and 3; 4 of 4, 5, and 6.	1 of No. 3	1 of 4 and 7.	4 of 8.	1	1	1 of 6-inch.	2	
	S. M. Whiteside	do	Sixth Cavalry	B	Fort Hays, Kans													
3	D. S. Gordon	do	Second Cavalry	D	Camp Douglas, Utah													
4	Elijah R. Wells	do	do	E	Fort Laramie, Wyo					4 of 3, 4, 5, and 6.								1
5	James N. Wheelan	First Lieut	do	B	Camp Brown, Wyo	12				3 of 2.								
6	Edw. J. Spaulding	Captain	do	C	Omaha Barracks, Nebr													
	George L. Tyler	do	do	F	Fort Ellis, Mont					3 of 3, 4, and 5.								
	C. C. Carr	do	First Cavalry	I	Benicia Barracks, Cal			1	1									
	Thomas McGregor	do	do	A	do			1	2									
	Henry Wagner	do	do	C	Camp McDermit, Nev				*2									
	R. F. Bernard	do	do	G	Camp Bidwell, Cal													
	H. E. Tutherly	Second Lieut	do	D	Benicia Barracks, Cal													
	Moses Harris	Captain	do	M	Fort Walla-Walla, Wash													
	J. G. Trimble	do	do		Camp Harney, Oreg													
	John Q. Adams	First Lieut	do	B	Fort Klamath, Oreg													
	F. K. Upham	do	do	L	Fort Walla-Walla, Wash													
	John Mix	Captain	Second Cavalry	M	Omaha Barracks, Nebr													
	Jno. P. Hatch	Lieut. Colonel	Fourth Cavalry		Fort Clark, Tex													

* Additional—Two half-round knives, two head-knives, two splitting-knives. Wishes increase of patent linen and shoe-thread, leather, and copper rivets and burrs.
† Additional—One rounding-iron and one splitting-machine.

ABSTRACT F.—*Abstract of recommendations of cavalry officers in relation to the saddlers' and blacksmiths' tools, &c.*—Continued.

Number appended to abstract and marked.	Names of officers.	SADDLERS' MATERIALS.																	SMITHS' TOOLS.							SMITHS' MATERIALS.				Remarks.
		Shoe-thread, pounds of.	Linen-thread, pounds of.	Iron-tacks, 6 and 12, M. of.	Beeswax, pounds of.	Black-wax, pounds of.	Bridle-leather, pounds of.	Harness-leather, pounds of.	Collar-leather, pounds of.	Copper-rivets and burrs, pounds of.	Iron bar-buckles, ¾-inch and 1¼-inch.	Roller-buckles, 1¾-inch.	Half-round buckles, ⅝-inch.	Halter-rings.	Girth-webbing, 12 yards, bolts of.	Neats-foot oil, gallons of.	Halter-squares.	Collins' harness-oil, lbs. of.	Shoeing-rasps.	Rat-tail files.	Flat-files.	Half-round files.	Saw-mill files.	Three-cornered files.	Paring-knife.	Horseshoe-nails, pounds of.	Cast steel, pounds of.	Iron, assorted.	Horseshoes.	
1	Gerald Russell	6	2	4	2	3	20	50		6	50	50	75	50	1	2														
2	Henry E. Noyes	3		3 of 6, 12; 1 of 18.	3	5	20	30	15	5									12							120				
	S. M. Whitside*																													Attached to proceedings of Board, and marked Appendix No. 20.
3	D. S. Gordon	4	2	3	1	3	100	250		2	1 grs. 1¼-in.		½ grs.				1 grs.													
4	Elijah R. Wells			6	1		50	100		3								10												
5	James N. Wheelan		13			3	†6	500		5	¼ grs.		3 doz.	½ grs.					3	2	2	2	4	4						
6	Edw. J. Spaulding							200	50	2									6	2	1	1	1	1	1	75	10	75	1,200	
	George L. Tyler																													
	C. C. C. Carr	5				3	35	50		2																				Referred by Chief of Ordnance Feb. 6, 1874, and returned to that office.
	Thomas McGregor	5				3	35	50		2																				Do.
	Henry Wagner																													Do.
	R. F. Bernard‡																													Do.
	H. E. Tutherly						30	30	15	3																				Do.
	Moses Harris§																													Do.
	J. G. Trimble§																													Do.
	John Q. Adams§																													Do.
	F. K. Upham						25	50	20																					Do.
	John Mix	‖1		4 of 10 and 12.	6	1	†1	45		1	⅛ grs.	24 ¾-in., 18 1½-in.		1 doz. 1⅛-in.	1		1 doz.													Attached to proceedings of Board, and marked Appendix No. 7.
	Jno. P. Hatch						60	120		6						6														Attached to proceedings of Board, and marked Appendix No. 70.

L. H. CARPENTER, *Captain Tenth Cavalry, Brevet Colonel,*
Recorder of the Board on Cavalry Equipments, &c.

* Recommends that neats-foot oil, emery and emery-cloth, and an additional supply of leather be furnished. † Sides.
‡ Wishes amount of leather doubled. § No suggestions. ‖ No. 12.

ABSTRACT G.—*Abstract of the opinions of officers, as set forth in their answers to the questions propounded by the Board on Cavalry Equipments, the original papers being appended to this abstract.*

Number of the original paper hereto appended.	Names of officers.	Rank.	Regiment.	Company.	Station.	What increase of width in saddles is recommended at pommel arc, and what percentage of increased size.	Sweat-leathers and saddle-skirts.		Girth.	
							In favor of.	Against.	Hair girth—in favor of.	Present girth—in favor of.
1	William B. Royall	Major	Fifth Cav		San Francisco, Cal		1		1	
2	Henry Wagner	Captain	First Cav	C	Camp McDermit, Nev	Increase, 4 per ct., ½ inch; 3 per cent., ½ inch.		1	1	
3	Joseph Kerin	do	Sixth Cav	F	Fort Hays, Kans					
4	A. P. Caraher	do	Eighth Cav	F	Fort Garland, Colo	Increase, 6 per ct., ½ inch	1		1	
5	L. H. Orleman	Second Lieut	Tenth Cav		Fort Sill, Indian Ter	Increase of largest size, 1½ inch; second size, 1 inch.	1		1	
6	R. H. Pratt	First Lieut	do	D	do	Increase, 5 per ct., 1 inch; 10 per cent., ½ inch.		1	1	
7	Abraham K. Arnold	Major	Sixth Cav					1	1	
8	Robert G. Smither	First Lieut	Tenth Cav		Fort Sill, Indian Ter	Increase of 75 per ct., 1 inch		1	1	
9	Theo. A. Baldwin	Captain	do	I	do	Increase of 6 per cent		1		1
10	S. T. Norvell	do	do		do	Increase of 12 per ct., ½ inch		1		1
11	J. W. Davidson	Lieut. Col.	do		do	Increase of 25 per ct., 1 inch		1	1	
12	John B. Vande Wiele	Captain	do	B	do	Increase of 10 per ct., ½ inch		1	1	
13	E. J. Spaulding	do	Second Cav	C			1		1	
14	D. Madden	do	Sixth Cav	C	Fort Hays, Kans			1	1	
15	Lewis Merrill	Major	Seventh Cav		Germantown, Pa		1			1
16	A. G. Brackett	Lieut. Col.	Second Cav					1		1
17	H. W. Wessels, jr	Captain	Third Cav	H	Fort D. A. Russell, Wyo			1	1	
18	James Oakes	Colonel	Sixth Cav		Fort Hays, Kans		1			
19	James Biddle	Major	do		Fort Lyon, Colo	Increase, 20 per ct., 1 inch; 10 per cent., 2 inches.	1		1	
20	A. D. King	First Lieut	Third Cav	I	Fort McPherson, Nebr			1	1	
21	Thomas H. Neill	Lieut. Col.	Sixth Cav		Fort Gibson, Indian Ter			1		1
22	C. E. Compton	Major	do		Fort Dodge, Kans	Increase, 5 per ct., 1 inch	1			1
23	William Harper, jr	First Lieut	do	K	Camp Supply, Indian Ter			1		1
24	John Mix	Captain	Second Cav	M	Omaha Barracks, Nebr		1		1	
25	William H. Andrews	First Lieut	Third Cav	L	Fort D. A. Russell, Wyo		1		1	
26	Thomas B. Dewees	Captain	Second Cav	A	Medicine Bow, Wyo			1	1	
27	G. Russell	do	Third Cav	K	Fort McPherson, Nebr			1	1	
28	H. H. Crews	First Lieut	Fourth Cav	K	Fort Clark, Tex	Increase, 10 per ct., ⅝ inch		1	1	
29	William B. Kennedy	Captain	Tenth Cav	F	Fort Sill, Indian Ter			1	1	
30	John Lee	do	Fourth Cav	D	Fort Clark, Tex			1		
31	John P. Hatch	Lieut. Col.	do		do			1	1	
32	B. H. Grierson	Colonel	Tenth Cav		Fort Sill, Indian Ter		1			1
33	Thomas McGregor	Captain	First Cav	A	Benicia Barracks, Cal	Increase, 1 inch higher at pommel.	1		1	
34	C. B. McLellan	do	Sixth Cav	L	Fort Riley, Kans			1	1	
35	A. D. B. Smead	First Lieut	Third Cav	F	Fort McPherson, Nebr			1	1	
36	D. S. Gordon	Captain	Second Cav	D	Camp Douglas, Utah			1	1	
37	Joseph Lawson	First Lieut	Third Cav	A	Sidney Barracks, Nebr	Increase, 12 per ct., ½ inch.	1		1	
38	J. I. Gregg	Colonel	Eighth Cav		Santa Fé, N. Mex			1	1	
39	Emmet Crawford	First Lieut	Third Cav		Fort D. A. Russell, Wyo	Increase in issue of Nos. 11, 11½, and 12.	1		1	
40	T. C. Tupper	Captain	Sixth Cav	G	Fort Dodge, Kans	Increase, 5 per ct., ¾ inch	1			
41	Washington L. Elliott	Lieut. Col.	First Cav		Benicia Barracks, Cal			1	1	
42	J. Scott Payne	Second Lieut	Sixth Cav		Fort Lyon, Colo	Increase, 20 per ct., 1½ inch	1		1	

ABSTRACT G.—*Abstract of the opinions of officers, &c.*—Continued.

Number of the original paper hereto appended.	Names of officers.	Rank.	Regiment.	Company.	Station.	What increase of width in saddles is recommended at pommel arc, and what percentage of increased size.	Sweat-leathers and saddle-skirts.		Girth.	
							In favor of.	Against.	Hair girth—in favor of.	Present girth—in favor of.
43	S. M. Whitside	Captain	Sixth Cav.	B	Fort Hays, Kans		1			1
44	C. G. Gordon	First Lieut	do	E	Fort Gibson, Indian Ter	Size, 13		1		1
45	Alvan C. Gillem	Colonel	First Cav.		Benicia Barracks, Cal		1		1	
46	J. McAllister	Major	Ord. Dep't		Benicia Arsenal, Cal		1		1	
47	John V. Du Bois	do	Third Cav		Fort McPherson, Nebr	Increased number of sizes		1	1	
48	William R. Harmon	Second Lieut	Tenth Cav.		Fort Sill, Indian Ter	Increase, 50 per ct., 1 inch; 50 per cent., ½ inch.		1	1	
49	H. E. Tutherly	do	First Cav.	D	Benicia Barracks, Cal		1		1	
50	Frank U. Robinson	do	Second Cav	B	Camp Douglas, Utah			1	1	
51	Charles D. Viele	Captain	Tenth Cav	C	Fort Sill, Indian Ter		1		1	
52	William McCleave	do	Eighth Cav.	B	Fort Union, N. Mex			1	1	
53	R. F. Bernard	do	First Cav	G	Camp Bidwell, Cal			1	1	
54	Louis T. Morris	do	Eighth Cav.	L	Fort Union, N. Mex			1	1	
55	E. R. Wells	do	Second Cav.	E	Fort Laramie, Wyo			1	1	
56	C. H. Carlton	do	Tenth Cav.		Fort Sill, Indian Ter			1	1	
57	O. W. Budd	Second Lieut	Fourth Cav.	M	Fort Duncan, Tex	Increase, 1 inch	1			1
58	A. E. Wood	do	do	L	Fort Clark, Tex		1			1
59	A. P. Morrow	Major	Ninth Cav.		San Antonio, Tex			1	1	
60	C. Mauck	Captain	Fourth Cav.	B	Fort Clark, Tex	Increase, 10 per ct., ⅜ inch; 10 per cent., ½ inch.		1	1	
61	Wesley Merritt	Lieut. Col	Ninth Cav.		Fort Concho, Tex			1		1
62	Henry E. Noyes	Captain	Second Cav.	I	Fort Sanders, Wyo	Increase, 3 per ct., 1 inch; 2 per cent., 1½ inch.	1		1	
63	Alexander Sutorius	do	Third Cav	E				1	1	
64	S. B. M. Young	do	Eighth Cav.	M	Fort Union, N. Mex			1	1	
65	Thomas C. Devin	Lieut. Col	do		Santa Fé, N. Mex		1		1	
66	G. W. Schofield	Major	Tenth Cav.		Springfield, Mass			1		1
67	Byron Dawson	First Lieut	Ninth Cav.	M	Fort Stockton, Tex			1	1	
68	Charles Meinhold	Captain	Third Cav.	B	Fort McPherson, Nebr				1	
69	F. S. Dodge	do	Ninth Cav.	D	Fort McKavett, Tex			1		1
70	Michael Cooney	do	do	A	Fort Concho, Tex			1		1
71	Nicholas Nolan	do	Tenth Cav.	A	Fort Sill, Indian Ter					1
72	Anson Mills	do	Third Cav	M	North Platte, Nebr			1	1	
73	Andrew J. Alexander	Major	Eighth Cav		Fort Union, N. Mex			1	1	
74	A. B. Kauffman	Captain	do	E	Fort Wingate, N. Mex	Issue, 20 per ct., 10¾ inches; 50 per ct., 11 inches; 30 per cent., 11¼ inches.		1	1	
75	William W. Tyler	First Lieut	Ninth Cav.	I	Fort Davis, Tex			1	1	
76	John Q. Adams	do	First Cav.	B	Fort Klamath, Oreg			1	1	
77	Peter M. Boehm	Captain	Fourth Cav.	E	Fort Duncan, Tex	All one size larger		1		1
78	Samuel S. Sumner	do	Fifth Cav.	D	Camp Bowie, Ariz			1	1	
79	George A. Custer	Lieut. Col	Seventh Cav		Fort Abrahm Lincoln, Dak			1	1	
80	Myles Moylan	Captain	do	A	do			1	1	
81	George W. Yates	do	do	F	do			1	1	
82	William Thompson	do	do	B	do			1	1	
83	Donald McIntosh	First Lieut	do	G	do			1	1	
84	Thomas W. Custer	do	do		do			1	1	
85	John F. Weston	do	do	L	do			1	1	
86	Thomas M. McDougall	do	do	E	do			1	1	

ABSTRACT G.—*Abstract of the opinions of officers, &c.*—Continued.

Number of the original paper hereto appended.	Names of officers.	Rank.	Regiment.	Company.	Station.	What increase of width in saddles is recommended at pommel arc, and what percentage of increased size.	Sweat-leathers and saddle-skirts.		Girth.	
							In favor of.	Against.	Hair girth—in favor of.	Present girth—in favor of.
87	Benjamin H. Hodgson	Second Lieut	Seventh Cav		Fort Abraham Lincoln, Dak			1	1	
88	Charles A. Varnum	do	do		do			1	1	
89	George D. Wallace	do	do		do			1	1	
90	William T. Craycroft	do	do		do			1	1	
91	G. C. Doane	First Lieut	Second Cav	G	Fort Ellis, Mont			1	1	
92	E. G. Mathey	do	Seventh Cav	M	Fort Rice, Dak	Increase, 1 inch higher	1			1
93	William H. Brown	Captain	Fifth Cav	F	Camp Grant, Ariz		1		1	
94	Robert P. Wilson	do	do	A	Camp Verde, Ariz	Increase, 25 per ct. 1 inch larger than 12-inch size.	1		1	
95	Edmund Luff	First Lieut	Eighth Cav	I	Fort Bayard, N. Mex			1	1	
96	James G. MacAdams	do	Second Cav	H	Fort Ellis, Mont		1		1	
97	N. B. Sweitzer	Major	do		do			1	1	
98	Lewis Thompson	Captain	do	L	do				1	
99	G. L. Tyler	do	do	F	do				1	
100	A. B. Wells	do	Eighth Cav	A	Fort Bayard, N. Mex			1	1	
101	James Egan	do	Second Cav	K	Fort Laramie, Wyo			1		1
102	James F. Wade	Major	Ninth Cav		Ringgold Barracks, Tex			1	1	
103	William Gerhard	First Lieut	do	G	do			1	1	
104	Francis Moore	Captain	do	L	do			1	1	
105	John T. Morrison	First Lieut	Tenth Cav	E	Fort Sill, Indian Ter	Increase of 6 per ct. Made wider.		1		1
106	Thomas Little	Captain	do		do	do		1		1
107	Thomas J. Spencer	First Lieut	do		do	do		1		1
108	Thomas C. Lebo	do	do		do	do		1		1
109	George H. Evans	Second Lieut	do		do	do		1		1
110	Frank P. Reap	do	do		do	do		1		1
111	James F. Randlett	Captain	Eighth Cav	D	Fort Stanton, N. Mex		1		1	
112	Elmer Otis	Major	First Cav			Increase, 10 per ct. 1 inch larger.		1	1	
113	J. G. Trimble	Captain	do	H		do		1	1	
114	Edw. S. Godfrey	First Lieut	Seventh Cav	K	Fort Rice, Dak	Increase, ½ inch	1		1	
115	Sebastian Gunther	Captain	Fourth Cav	H	Fort Clark, Tex		1		1	
116	Eug. A. Carr	Lieut. Col.	Fifth Cav		Camp Lowell		1		1	
117	Charles C. Cresson	First Lieut	First Cav	K		Increase of 10 per ct. 1 inch wider.		1	1	
118	C. C. C. Carr	Captain	do	F					1	
119	Oscar Hagen	do	Ninth Cav	B	Camp near King's Ranch, Tex			1	1	
120	S. D. Sturgis	Colonel	Seventh Cav		Saint Paul, Minn			1	1	
121	F. K. Upham	First Lieut	First Cav	L			1		1	
122	Moses Harris	Captain	do	M			1		1	
123	Charles D. Parkhurst	Second Lieut	Fifth Cav	E	Camp McDowell, Ariz			1	1	
124	A. E. Latimer	Major	Fourth Cav		Fort Duncan, Tex			1		1
125	R. H. Montgomery	Captain	Fifth Cav	B	Camp Apache, Ariz			1		1
126	George A. Drew	First Lieut	Third Cav	C				1	1	
127	N. A. M. Dudley	Major	do			10 per ct. ½ inch	1		1	

ABSTRACT G.—*Abstract of the opinions of officers, &c.*—Continued.

Number of the original paper hereto appended.	Names of officers.	Fastening for girth.		Saddle-bag.		Recommendations on the curb-bit.	Light halter-chain in addition to leather halter-strap.		Recommendations on the curry-comb.	Recommendations on the horse-brush.
		Cincha-strap fastening—in favor of.	Buckle fastening—in favor of.	Leather saddle-bag—in favor of.	Canvas saddle-bag—in favor of.		In favor of.	Against.		
1	William B. Royall	1		1		Lighter bit		1		Leather back; better material.
2	Henry Wagner	1			1	do	1			Leather back.
3	Joseph Kerin			1		Old dragoon bit		1		Better quality of hair.
4	A. P. Caraher	1		1						Hair ½ inch longer.
5	L. H. Orleman	1		1		Straight steel branches	1		Strap	Leather back.
6	R. H. Pratt	1				Milder bit	1		Better quality	Do.
7	Abraham K. Arnold	1		1		Jenifer bit		1		
8	Robert G. Smither		1	1		Old dragoon bit		1	Better material	
9	Theo. A. Baldwin	1		1			1		Better quality	Better quality.
10	S. T. Norvell	1		1		Old dragoon bit	1			
11	J. W. Davidson	1		1		do	1			
12	John B. Vande Wiele		1	1			1			Bristles 1 inch long.
13	E. J. Spaulding	1		1			1			Leather back.
14	D. Madden	1		1		Old dragoon bit		1		Better quality of hair.
15	Lewis Merrill	1			1	Lighter bit		1		Leather back.
16	A. G. Brackett		1	1						
17	H. W. Wessels, jr	1			1		1			
18	James Oakes		1	1		Lighter bit		1		Better quality.
19	James Biddle	1		1		do	1		Rubber brush-comb	Leather back.
20	A. D. King	1		1		Old dragoon bit	1			Do.
21	Thomas H. Neill		1		1	do		1		Do.
22	C. E. Compton	1		1		Lighter bit	1		Rubber-comb, with metal points.	Better quality.
23	William Harper, jr		1	1			1			
24	John Mix		1		1			1	Strap	
25	William H. Andrews	1		1		Burdoon bit, in use in the English cavalry.	1			Leather back.
26	Thomas B. Dewees		1	1		Smaller bit		1		Gutta-percha, with whalebone bristles.
27	G. Russell		1	1			1			
28	H. H. Crews		1		1		1			Leather back.
29	William B. Kennedy	1		1		Lighter bit	1		Open back	Do.
30	John Lee		1	1		do	1			
31	John P. Hatch		1	1			1			Bristles instead of whalebone.
32	B. H. Grierson		1	1		Milder bit	1		Better material	
33	Thomas McGregor	1		1		Mild bit, No. 4	1			Leather back.
34	C. B. McLellan	1		1		Grimsley bit	1			
35	A. D. B. Smead	1		1		Shoemaker bit	1			
36	D. S. Gordon		1	1			1			
37	Joseph Lawson		1	1		Shoemaker bit		1		
38	J. L. Gregg	1		1		Roberts bit	1			
39	Emmet Crawford	1		1			1			
40	T. C. Tupper		1	1		Old dragoon bit	1			Leather back.
41	Washington L. Elliott		1	1		Shoemaker bit	1		Strap	Flexible back.
42	J. Scott Payne	1		1		Shoemaker bit	1		Better material	Better material.
43	S. M. Whitside		1	1		Daniels bit		1		
44	C. G. Gordon		1		1	Baldwin bit		1		Leather back.

ABSTRACT G.—*Abstract of the opinions of officers, &c.*—Continued.

Number of the original paper hereto appended.	Names of officers.	Fastening for girth.		Saddle-bag.		Recommendations on the curb-bit.	Light halter-chain in addition to leather halter-strap.		Recommendations on the curry-comb.	Recommendations on the horse-brush.
		Cincha-strap fastening—in favor of.	Buckle fastening—in favor of.	Leather saddle-bag—in favor of.	Canvas saddle-bag—in favor of.		In favor of.	Against.		
45	Alvan C. Gillem	1			1	Grimsley bit				Leather back.
46	J. McAllister	1		1		Bit No. 2, with shorter cheek-pieces.	1			
47	John V. Du Bois	1		1		Chiffany bit	1			Better quality.
48	William R. Harmon	1		1		Milder bit	1		Strap	Leather back.
49	H. E. Tutherly	1		1			1			
50	Frank U. Robinson	1		1		Old dragoon bit		1		
51	Charles D. Viele	1					1			
52	William McCleave	1		1		Shoemaker bit		1		
53	R. F. Bernard	1			1	Lighter bit	1			Do.
54	Louis T. Morris	1			1			1	Strap	Do.
55	E. R. Wells		1	1		Lighter bit		1		
56	C. H. Carlton	1		1			1			
57	O. W. Budd		1	1		Old dragoon bit	1			Hair bristles.
58	A. E. Wood		1	1				1		Longer bristles.
59	A. P. Morrow		1	1		Lighter bit	1			Bristles.
60	C. Mauck		1		1		1		Better quality	Leather back.
61	Wesley Merritt		1	1		Old dragoon bit	1		Strap	Flexible back.
62	Henry E. Noyes		1	1		do	1		Open back	Leather back.
63	Alexander Sutorius		1	1		do	1		do	Do.
64	S. B. M. Young	1			1			1	Strap	Do.
65	Thomas C. Devin	1			1	Shoemaker bit	1			
66	G. W. Schofield	1			1	Lighter bit				
67	Byron Dawson	1		1		do	1			
68	Charles Meinhold	1		1		do		1		Better materials.
69	F. S. Dodge		1	1		Old dragoon bit	1		Strap	Leather back
70	Michael Cooney		1	1		do			do	Do.
71	Nicholas Nolan		1	1		do	1		do	Do.
72	Anson Mills	1		1		Lighter bit		1		
73	Andrew J. Alexander	1			1			1	Strap	Flexible back.
74	A. B. Kauffman	1			1	Lighter bit		1	do	Leather back.
75	William W. Tyler		1	1			1			
76	John Q. Adams	1		1				1	Open back	Do.
77	Peter M. Boehm		1	1		Brass bit		1		Do.
78	Samuel S. Sumner	1		1		Brass bit, Grimsley patent	1			Do.
79	George A. Custer		1	1		Present bit, steel	1		Better quality	Leather back and hair.
80	Myles Moylan		1	1		do	1		do	Do.
81	George W. Yates		1	1		do	1		do	Do.
82	William Thompson		1	1		do	1		do	Do
83	Donald McIntosh		1	1		do	1		do	Do.
84	Thomas W. Custer		1	1		do	1		do	Do.
85	John F. Weston		1	1		do	1		do	Do.
86	Thomas M. McDougall		1	1		do	1		do	Do.
87	Benjamin H. Hodgson		1	1		do	1		do	Do.
88	Charles A. Varnum		1	1		do	1		do	Do.
89	George D. Wallace		1	1		do	1		do	Do.
90	William T. Craycroft		1	1		do	1		do	Do.
91	G. C. Doane	1		1		Lighter bit	1			Leather back,

ABSTRACT G.—*Abstract of the opinions of officers, &c.*—Continued.

Number of the original paper hereto appended.	Names of officers.	Fastening for girth.		Saddle-bag.		Recommendations on the curb-bit.	Light halter-chain in addition to leather halter-straps.		Recommendations on the curry-comb.	Recommendations on the horse-brush.
		Cincha-strap fastening—in favor of.	Buckle fastening—in favor of.	Leather saddle-bag—in favor of.	Canvas saddle-bag—in favor of.		In favor of.	Against.		
92	E. G. Mathey	....	1	1	....	.....	1	.....	.....	Leather back.
93	William H. Brown	1	....	1	....	.....	1	.....	.....	Do.
94	Robert P. Wilson	1	....	1	....	Lighter bit	1	.....	Better quality	Do.
95	Edmund Luff	1	....	....	1	.....do	1	.....	.....do	
96	James G. MacAdams	....	1	1	....	.....	1	.....	.....	Do.
97	N. B. Sweitzer	....	1	1	....	.....	1	.....	.....	
98	Lewis Thompson	....	1	1	....	Stronger curb-hook	1	.....	Hutchings & Sons, Connecticut.	
99	G. L Tyler	1	....	1	....	Lighter bit	1	.....	.....	
100	A. B. Wells	1	....	....	1	No. 2 cavalry bit	.....	1	.....	
101	James Egan	....	1	1	....	.....	1	.....	.....	
102	James F. Wade	1	....	1	....	Milder bit	.....	1	.....	Do.
103	William Gerhard	....	1	1	....	.....do	1	.....	.....	Better quality of hair.
104	Francis Moore	....	1	....	....	.....do	1	.....	.....	Better quality.
105	John T. Morrison	1	....	1	....	Size Nos. 1 and 2	1	.....	Better quality	Do.
106	Thomas Little	1	....	1	....	.....do	1	.....	.....do	Do.
107	Thomas J. Spencer	1	....	1	....	.....do	1	.....	.....do	Do.
108	Thomas C. Lebo	1	....	1	....	.....do	1	.....	.....do	Do.
109	George H. Evans	1	....	1	....	.....do	1	.....	.....do	Do.
110	Frank P. Reap	1	....	1	....	.....do	1	.....	.....do	Do.
111	James F. Randlett	1	....	1	....	.....	1	.....	.....	Leather back.
112	Elmer Otis	1	....	1	....	.....	1	.....	Strap	Do.
113	J. G. Trimble	1	....	1	....	Old Kearney bit	.....	1	.....	
114	Edw. S. Godfrey	1	....	1	....	Lighter bit	1	.....	.....	Do.
115	Sebastian Gunther	....	1	1	....	Old dragoon bit	1	.....	Strap	Do.
116	Eug. A Carr	1	....	1	....	Baucher bit	.....	1	Open back	Do.
117	Charles C. Cresson	1	....	1	....	Old Kearney bit	.....	1	Strap	Do.
118	C. C. C. Carr	1	....	1	....	Lighter (brass) bit	1	.....	.....	Do.
119	Oscar Hagen	1	....	1	....	.....	1	.....	.....	Flexible back.
120	S. D. Sturgis	....	1	1	....	.....	1	.....	.....	Leather back.
121	F. K. Upham	1	....	1	....	Lighter bit	.....	1	.....	Do.
122	Moses Harris	1	....	1	....	.....do	.....	1	.....	Do.
123	Charles D Parkhurst	1	..	1	....	.....do	1	.....	Smaller curry-comb	Do.
124	A. E. Latimer	*1	*1	1	....	.....do	.....	1	Open back	Do.
125	R. H. Montgomery	....	1	1	....	.....do	.....	1	Smaller comb	Do.
126	George A. Drew	1	...	....	1	.....	1	.....	.....	
127	N. A. M. Dudley	....	1	1	....	Shoemaker bit	.....	1	.....	Martin's brush.

* Recommends both.

ABSTRACT G.—*Abstract of the opinions of officers, &c.*—Continued.

Number of the original paper hereto appended.	Names of officers.	Recommendations on the change in the lariat.		Suggestions on change in the picket-pin.	Dark-blue felt saddle cloth in addition to saddle-blankets.		Recommendations in regard to side-lines.	Iron pins three feet long, with rings on top to fasten picket-line to the ground.	
		Horse-hair—in favor of.	Change recommended.		In favor of.	Against.		In favor of.	Against.
1	William B. Royall	1				1	Rope		
2	Henry Wagner	1			1			1	
3	Joseph Kerin		Manila rope	Col. James Oakes's picket-pin.	1			1	
4	A. P. Caraher	1			1			1	
5	L. H. Orleman	1				1	Chains to lengthen and shorten		
6	R. H. Pratt	1				1			1
7	Abraham K. Arnold	1		Picket-pin invented by first sergeant of Captain McLellan's company, Sixth Cavalry.	1		Chains to be shorter	1	
8	Robert G. Smither	1					Chains shorter		1
9	Theo. A. Baldwin	1	Buffalo hair		1		do	1	
10	S. T. Norvell								
11	J. W. Davidson	1					Chains to lengthen and shorten		1
12	John B. Vande Wiele	1		15 inches long	1		2 feet 10 inches proper length	1	
13	E. J. Spaulding	1							
14	D. Madden		½-inch Manila rope	Col. James Oakes's picket-pin.			Chains shorter	1	
15	Lewis Merrill			Steel		1	Rope		
16	A. G. Brackett						do		1
17	H. W. Wessels, jr	1		Lyon's patent					
18	James Oakes		Manila rope	3 inches longer, with swivel	1		Chains shorter	1	
19	James Biddle	1				1			
20	A. D. King		Hempen rope, ½-inch.	Lyon's patent	1		Chains shorter	1	
21	Thomas H. Neill	1		Picket-pin of first sergeant of Captain McLellan's company, Sixth Cavalry.	1			1	
22	C. E. Compton				1		25 per ct., 26 inches; 50 per ct., 30 inches; 25 per ct., 32 inches.	1	
23	William Harper, jr		Rope			1			
24	John Mix	1		Swivel at top	1		17 to 21 inches long	1	
25	William H. Andrews	1		Lyon's patent	1		2 feet long	1	
26	Thomas B. Dewees	1		12 inches long	1		Rope, 22, 24, 26 inches long		1
27	G. Russell	1		Lyon's patent	1			1	
28	H. H. Crews		Manila rope, ½-inch		1		Double leather, 24 inches long	1	
29	William B. Kennedy			Four-sided, 15 inches long	1		Leather straps		1
30	John Lee	1			1			1	
31	John P. Hatch		Manila rope, ½-inch	Swivel		1	Chains 24 to 28 inches long		1
32	B. H. Grierson			Steel point	1				1
33	Thomas McGregor	1		Swivel at top	1		Chains 22 to 26 inches	1	
34	C. B. McLellan					1		1	
35	A. D. B. Smead		Rope	Lyon's patent	1			1	
36	D. S. Gordon	1				1	General Palmer's patent front hopples.	1	
37	Joseph Lawson		Rope	Lyon's patent	1		20 inches proper length	1	
38	J. I. Gregg		Rawhide		1				1
39	Emmet Crawford		Rope		1			1	
40	T. C. Tupper	1			1			1	

ABSTRACT G.—*Abstract of the opinions of officers, &c.*—Continued.

Number of the original paper hereto appended.	Names of officers.	Recommendations on the change in the lariat.		Suggestions on change in the picket-pin.	Dark-blue felt saddle-cloth in addition to saddle-blankets.		Recommendations in regard to side-lines.	Iron pins three feet long, with rings on top to fasten picket-line to the ground.	
		Horse-hair—in favor of.	Change recommended.		In favor of.	Against.		In favor of.	Against.
41	Washington L. Elliott	1	Long hair	Swivel ring	1		18 inches long, to lengthen and shorten.	1	
42	J. Scott Payne	1		Swivel at top	1		Chains shorter	1	
43	S. M. Whitside		Manila rope	Longer, and swivel	1			1	
44	C. G. Gordon			Sergt. Kirk's (Sixth Cavalry) picket-pin.	1			1	
45	Alvan C. Gillem	1		Good swivel	1			1	
46	J. McAllister					1	Chains 2 feet 2 inches; side-lines 3 feet.		
47	John V. Du Bois		Rope					1	
48	William R. Harmon	1				1	Chains to lengthen and shorten	1	
49	H. E. Tutherly				1		22 to 26 inches long		
50	Frank U. Robinson	1			1			1	
51	Charles D. Viele	1				1	Chains to lengthen and shorten		1
52	William McCleave		Buck-skin		1		Chains 24 to 26 inches long	1	
53	R. F. Bernard			Good steel		1		1	
54	Louis T. Morris		Buck-skin	Revolving swivel	(*)			1	
55	E. R. Wells	1	With swivel			1	Chains 20 inches long		
56	C. H. Carlton					1	Chains to lengthen and shorten		1
57	O. W. Budd		Manila rope	Better material		1	Chains 2½ feet long		1
58	A. E. Wood	1			1				1
59	A. P. Morrow				1		Chains 2 feet long		1
60	C. Mauck		Manila rope			1	Chains 24 inches long	1	
61	Wesley Merritt				1		Chains to lengthen and shorten	1	
62	Henry E. Noyes	1		Picket-pin of First Sergt. A. I. House, Company I, Second Cavalry.	1		Chains 18 to 20 inches long	1	
63	Alexander Sutorius	1		Picket-pin of Blacksmith Mace, Second Cavalry.	1		Chains 20 inches long	1	
64	S. B. M. Young		Buck-skin	Revolving swivel	(*)			1	
65	Thomas C. Devin	1			1				
66	G. W. Schofield					1			
67	Byron Dawson		Manila rope		1		Chains 2½ feet long	1	
68	Charles Meinhold		do	Lyon's patent	1		Chains 2 feet long	1	
69	F. S. Dodge				1		Chains to lengthen and shorten		1
70	Michael Cooney	1	Swivel		1				1
71	Nicholas Nolan	1			1				1
72	Anson Mills			Lyon's patent					
73	Andrew J. Alexander		Buck-skin	Swivel	(*)			1	
74	A. B. Kauffman	1	And rope			1	Halter-shank	1	
75	William W. Tyler	1			1		Chains 2 feet 5 inches long	1	
76	John Q. Adams	1			1			1	
77	Peter M. Boehm		Manila rope	Better material	1		Chains 2½ feet long		1
78	Samuel S. Sumner	1			1		Chains 18 to 20 inches long—swivel.	1	
79	George A. Custer	1		15 inches long	1		75 per ct., 28 inches; 25 per ct., 30 inches long.		1
80	Myles Moylan	1		do	1		do		1
81	George W. Yates	1		do	1		do		1

* In favor of gray.

LIBRARY
... FLES COUNTY MUSEUM OF NATURAL HISTORY

ABSTRACT G.—*Abstract of the opinions of officers, &c.*—Continued.

Number of the original paper hereto appended.	Names of officers.	Recommendations on the change in the lariat.		Suggestions on change in the picket-pin.	Dark-blue felt saddle-cloth in addition to saddle-blankets.		Recommendations in regard to side-lines.	Iron pins three feet long, with rings on top to fasten picket-line to the ground.	
		Horse-hair—in favor of	Change recommended.		In favor of.	Against.		In favor of.	Against.
82	William Thompson	1		15 inches long	1		75 per ct., 28 inches; 25 per ct., 30 inches long.		1
83	Donald McIntosh	1		do	1		do		1
84	Thomas W. Custer	1		do	1		do		1
85	John F. Weston	1		do	1		do		1
86	Thomas M. McDougall	1		do	1		do		1
87	Benjamin H. Hodgson	1		do	1		do		1
88	Charles A. Varnum	1		do	1		do		1
89	George D. Wallace	1		do	1		do		1
90	William T. Craycroft	1		do	1		do		1
91	G. C. Doane	1			1		Chains 24 inches long	1	
92	E. G. Mathey	1			1		Hopples	1	
93	William H. Brown	1		Bayonet-shaped pin		1		1	
94	Robert P. Wilson	1				1		1	
95	Edmund Luff					1	Chains 20 inches long		1
96	James G. MacAdams	1				1	Chains 18 inches long	1	
97	N. B. Sweitzer	1				1	Chains 17 to 20 inches long	1	
98	Lewis Thompson					1	Chains 16 inches long		1
99	G. L. Tyler	1						1	
100	A. B. Wells	1			1				1
101	James Egan		Rope with swivel			1	35 per ct., 2 feet 5 inches; 65 per ct., 2 feet 7 inches.	1	
102	James F. Wade	1			1			1	
103	William Gerbard	1				1	Chains 22 to 24 inches long	1	
104	Francis Moore	1						1	
105	John T. Morrison	1	Buffalo hair			1	25 per ct. shorter	1	
106	Thomas Little	1	do			1	25 per ct. of chains shorter	1	
107	Thomas J. Spencer	1	do			1	do	1	
108	Thomas C. Lebo	1	do			1	do	1	
109	George H. Evans	1	do			1	do	1	
110	Frank P. Reap	1	do			1	do	1	
111	James F. Randlett	1		15 inches long	1		Chains 24 inches long	1	
112	Elmer Otis	1			1		Hopples	1	
113	J. G. Trimble			Kiernan's invention	1			1	
114	Edw. S. Godfrey		⅜-inch Manila rope		1				1
115	Sebastian Gunther	1		Swivel on top	1			1	
116	Eug. A. Carr		Better rope	Ring on top		1		1	
117	Charles C. Cresson	1	With swivel		1		Hopples	1	
118	C. C. C. Carr	1			1			1	
119	Oscar Hagen	1			1		Chains 2 feet long	1	
120	S. D. Sturgis	1			1		20 to 22 inches from ring to ring		1
121	F. K. Upham	1		Picket-pin of First Lieutenant F. K. Upham.	1			1	
122	Moses Harris	1		do	1			1	
123	Charles D. Parkhurst	1		Swivel	1			1	
124	A. E. Latimer	1		Larger heads		1	Chains 22 to 26 inches long	1	
125	R. H. Montgomery	1				1		1	
126	George A. Drew	1				1		1	
127	N. A. M. Dudley		½-inch Hemp rope	William Lyon's patent	1		Chains 20 inches long	1	

ABSTRACT G.—*Abstract of the opinions of officers, &c.*—Continued.

Number of the original paper hereto appended.	Names of officers.	Saber-slings attached to waist-belt by two straps at one point, or by attachment from two separate points.		Pistol-holster.		Recommendations in regard to the carrying of the ammunition.		Mountain-howitzer forge.		Proposed transportation of the portable forge in a two-wheeled vehicle.		What manufacture of horseshoes preferred.
				Flap.	Strap.							
		Attachment by two straps at one point, Stuart's attachment—in favor of.	Attachment from two separate points—in favor of.	In favor of.	In favor of.	For use in field.	For use in garrison.	In favor of.	Against.	In favor of.	Against.	
1	William B. Royall		1	1		Scouting-belt		1			1	Goodenough.
2	Henry Wagner		1	1		do		1		1		Do.
3	Joseph Kerin	1		1					1	1		Rhode Island Comp'y.
4	A. P. Caraher	1			1	Pouch	Box No. 1	1				
5	L. H. Orleman	1		1		do	Pouch	1		1		Burden.
6	R. H. Pratt				1	Scouting-belt	Box No. 1			1		Do.
7	Abraham K. Arnold	1										
8	Robert G. Smither	1				Pouch	Pouch		1	1		
9	Theo. A. Baldwin					Scouting-belt	Box No. 1	1		1		
10	S. T. Norvell	1		1		do	Pouch	1			1	
11	J. W. Davidson	1		1		Pouch	do			1		Do.
12	John B. Vande Wiele	1		1		do	do	1		1		
13	E. J. Spaulding	1		1		Scouting-belt	Scouting-belt		1	1		Do.
14	D. Madden		1	1				1				Rhode Island Comp'y.
15	Lewis Merrill	1			1	Pouch	Pouch				1	Burden.
16	A. G. Brackett	1		1					1		1	
17	H. W. Wessels, jr		1	1							1	Do.
18	James Oakes	1		1		Pouch	Pouch	1		1		Do.
19	James Biddle		1		1	do	do			1		Do.
20	A. D. King	1			1	Scouting-belt	Box No. 1	1		1		
21	Thomas H. Neill		1		1	Pouch	Pouch		1	1		Do.
22	C. E. Compton	1			1	Scouting-belt	Scouting-belt			1		Do.
23	Willlam Harper, jr	1									1	
24	John Mix	1		1		Scouting-belt			1	1		Do.
25	William H. Andrews			1		do				1		Do.
26	Thomas B. Dewees	1			1		Pouch		1	1		
27	G. Russell	1		1		Scouting-belt		1			1	Do.
28	H. H. Crews	1			1					1		
29	William B. Kennedy	1			1	Scouting-belt	Box No. 1	1			1	
30	John Lee	1		1		do				1		
31	John P. Hatch	1									1	Griffith.
32	B. H. Grierson		1			Pouch	Pouch			1		Burden.
33	Thomas McGregor	1		1		Scouting-belt	Scouting-belt				1	Perkins.
34	C. B. McLellan		1	1		Pouch	Pouch		1	1		Burden.
35	A. D. B. Smead	1		1		Scouting-belt		1				Schönberger & Co.
36	D. S. Gordon		1		1	Pouch	Pouch	1			1	Burden.
37	Joseph Lawson	1			1	Scouting-belt	Box No. 2	1		1		Do.
38	J. I. Gregg	1									1	
39	Emmet Crawford		1			Scouting-belt	Box No. 1			1		Do.
40	T. C. Tupper	1				Pouch	Pouch				1	
41	Washington L. Elliott			1		do	do	1			1	
42	J. Scott Payne	1		1		do	do			1		Do.
43	S. M. Whitside	1		1		do	do	1		1		Do.
44	C. G. Gordon		1		1	do	do		1	1		Do.
45	Alvan C. Gillem	1		1		Scouting-belt	Scouting-belt	1			1	Do.
46	J. McAllister				1	do					1	

ABSTRACT G.—*Abstract of the opinions of officers, &c.*—Continued.

Number of the original paper hereto appended.	Names of officers.	Saber-slings attached to waist-belt by two straps at one point, Stuart's attachment—in favor of.	Attachment from two separate points—in favor of.	Pistol-holster.		Recommendations in regard to the carrying of the ammunition.		Mountain-howitzer forge.		Proposed transportation of the portable forge in a two-wheeled vehicle.		What manufacture of horseshoes preferred.
				Flap.	Strap.							
		Attachment by two straps at one point, Stuart's attachment—in favor of.	Attachment from two separate points—in favor of.	In favor of.	In favor of.	For use in field.	For use in garrison.	In favor of.	Against.	In favor of.	Against.	
47	John V. Du Bois	1			1	Scouting-belt					1	
48	William R. Harmon	1		1		do	Scouting-belt	1			1	Burden.
49	H. E. Tutherly	1			1	do					1	Perkins.
50	Frank U. Robinson		1	1		do	Box No. 1		1	1		
51	Charles D. Viele	1		1		do		1		1		Burden.
52	William McCleave		1		1	do	Box No. 1		1		1	Do.
53	R. F. Bernard	1			1	do		1			1	Do.
54	Louis T. Morris		1		1	Pouch	Box No. 1				1	
55	E. R. Wells		1	1		Scouting-belt	Scouting-belt	1			1	
56	C. H. Carlton	1		1		do	do					
57	O. W. Budd	1		1		Pouch	Box No. 1		1	1		Do.
58	A. E. Wood	1			1				1	1		
59	A. P. Morrow		1		1		Box No. 1		1	1		
60	C. Mauck	1		1		Cartridge-vest			1			
61	Wesley Merritt	1			1	Scouting-belt	Scouting-belt				1	
62	Henry E. Noyes	1			1	do	Box No. 1	1		1		Do.
63	Alexander Sutorius	1			1	Pouch	do	1		1		N. N. W. Company.
64	S. B. M. Young		1		1	do	do				1	
65	Thomas C. Devin	1		1		Scouting-belt	Scouting-belt			1		
66	G. W. Schofield									1		
67	Byron Dawson		1	1				1		1		Burden.
68	Charles Meinhold	1			1	Scouting-belt	Box No. 1				1	
69	F. S. Dodge		1	1		do	Scouting-belt		1	1		
70	Michael Cooney		1	1		do	Box No. 1				1	
71	Nicholas Nolan		1	1		do	Pouch				1	
72	Anson Mills					do					1	N. W. N. Company.
73	Andrew J. Alexander		1		1	Pouch	Pouch				1	
74	A. B. Kauffman		1		1	Scouting-belt	Scouting-belt		1	1		
75	William W. Tyler			1						1		
76	John Q. Adams	1		1		Scouting-belt	Box No. 1	1		1		Burden.
77	Peter M. Boehm			1		Pouch	do		1	1		Do.
78	Samuel S. Sumner	1			1					1		Do.
79	George A. Custer	1		1		Pouch	Pouch					Do.
80	Myles Moylan	1		1		do	do					Do.
81	George W. Yates	1		1		do	do					Do.
82	William Thompson	1		1		do	do					Do.
83	Donald McIntosh	1		1		do	do					Do.
84	Thomas W. Custer	1		1		do	do					Do.
85	John F. Weston	1		1		do	do					Do.
86	Thomas M. McDougall	1		1		do	do					Do.
87	Benjamin H. Hodgson	1		1		do	do					Do.
88	Charles A. Varnum	1		1		do	do					Do.
89	George D. Wallace	1		1		do	do					Do.
90	William T. Craycroft	1		1		do	do					Do.
91	G. C. Doane		1		1	Scouting-belt	Scouting-belt	1			1	N. W. N. Company.
92	E. G. Mathey		1	1		Pouch	Pouch	1		1		Burden.

ABSTRACT G.—*Abstract of the opinions of officers, &c.*—Continued.

Number of the original paper hereto appended.	Names of officers.	Saber-slings attached to waist-belt by two straps at one point, or by attachment from two separate points.		Pistol-holster.		Recommendations in regard to the carrying of the ammunition.		Mountain-howitzer forge.		Proposed transportation of the portable forge in a two-wheeled vehicle.		What manufacture of horseshoes preferred.
		Attachment by two straps at one point, Stuart's attachment—in favor of.	Attachment from two separate points—in favor of.	Flap. In favor of.	Strap. In favor of.	For use in field.	For use in garrison.	In favor of.	Against.	In favor of.	Against.	
93	William H. Brown	.....	1	.....	1	Scouting-belt	Scouting-belt	.....	.....	.....	.....	Burden.
94	Robert P. Wilson	.....	1	1	.....	....do	Box No. 1	.....	.....	.....	.....	Harper's patent.
95	Edmund Luff	.....	1	.....	1	.....	.....	.....	.....	.....	.....	
96	James G. MacAdams	1	.....	.....	1	Belt	Scouting-belt	.....	.....	1	.....	Burden.
97	N. B. Sweitzer	1	.....	1	.....	Scouting-belt	....do	.....	.....	.....	.....	
98	Lewis Thompson	.....	1	1	.....	....do	....do	.....	.....	.....	1	Do.
99	G. L. Tyler	.....	1	.....	1	....do	....do	.....	.....	1	.....	Do.
100	A. B. Wells	.....	1	.....	1	.....	.....	.....	.....	.....	1	Do.
101	James Egan	1	.....	1	.....	Scouting-belt	Box No. 1	1	.....	.....	1	Do.
102	James F. Wade	1	.....	.....	1	.....	.....	.....	1	1	.....	
103	William Gerhard	1	.....	.....	.....	.....	.....	.....	1	1	.....	Do.
104	Francis Moore	.....	.....	.....	1	.....	.....	.....	1	1	.....	Do.
105	John T. Morrison	.....	1	.....	.....	Scouting-belt	Box No. 1	1	.....	1	.....	
106	Thomas Little	.....	1	.....	.....	....do	....do	1	.....	1	.....	
107	Thomas J. Spencer	.....	1	.....	.....	....do	....do	1	.....	1	.....	
108	Thomas C. Lebo	.....	1	.....	.....	....do	....do	1	.....	1	.....	
109	George H. Evans	.....	1	.....	.....	....do	....do	1	.....	1	.....	
110	Frank P. Reap	.....	1	.....	.....	....do	....do	1	.....	1	.....	
111	James F. Randlett	.....	1	.....	.....	....do	....do	.....	1	.....	1	
112	Elmer Otis	1	.....	1	.....	Pouch	Pouch	.....	.....	1	.....	Goodenough.
113	J. G. Trimble	1	.....	1	.....	Scouting-belt	Scouting-belt	1	.....	1	.....	Do.
114	Edw. S. Godfrey	1	.....	1	.....	....do	....do	.....	.....	1	.....	Burden.
115	Sebastian Gunther	1	.....	.....	1	....do	....do	.....	.....	1	.....	Do.
116	Eug. A. Carr	.....	1	1	.....	....do	....do	.....	.....	.....	1	Do.
117	Charles C. Cresson	.....	1	1	.....	....do	....do	1	.....	1	.....	Goodenough.
118	C. C. C. Carr	1	.....	.....	1	Box K	Box K	1	.....	.....	1	Do.
119	Oscar Hagen	.....	1	.....	.....	Scouting-belt	.....	1	.....	1	.....	
120	S. D. Sturgis	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	Burden.
121	F. K. Upham	1	.....	.....	1	Scouting-belt	Scouting-belt	1	.....	1	.....	Do.
122	Moses Harris	1	.....	.....	1	Pouch	Pouch	1	.....	1	.....	Do.
123	Charles D. Parkhurst	.....	.....	.....	1	Scouting-belt	Scouting-belt	.....	.....	1	.....	Rhode Island.
124	A. E. Latimer	.....	1	1	.....	....do	Box No. 1	.....	1	1	.....	Burden.
125	R. H. Montgomery	.....	1	.....	1	....do	....do	.....	.....	.....	.....	Do.
126	George A. Drew	.....	1	.....	.....	....do	.....	1	.....	1	.....	Do.
127	N. A. M. Dudley	.....	1	.....	1	....do	Box No. 1	1	.....	.....	1	Do.

ABSTRACT G.—*Abstract of the opinions of officers, &c.*—Continued.

Number of the original paper hereto appended.	Names of officers.	What manufacture of horseshoe-nails preferred.	Horseshoes.	
			What sizes to be issued, and what proportion of each size.	What amount necessary for a six months' supply.
1	William B. Royall			
2	Henry Wagner	N. W. N. Company	25 per cent., No. 1; 25 per cent., No. 2; 50 per cent., No. 3	1,400 pounds.
3	Joseph Kerin	Globe	15 per cent., No. 1; 50 per cent., No. 2; 35 per cent., No. 3	
4	A. P. Caraher			
5	L. H. Orleman	Globe	45 per cent., No. 2; 45 per cent., No. 3; 10 per cent., No. 4	
6	R. H. Pratt	N. W. N. Company	25 per cent., No. 1; 50 per cent., No. 2; 25 per cent., No. 3	
7	Abraham K. Arnold			
8	Robert G. Smither			
9	Theo. A. Baldwin			
10	S. T. Norvell		25 per cent., No. 1; 50 per cent., No. 2; 25 per cent., No. 3	
11	J. W. Davidson	Globe	40 per cent., No. 2; 50 per cent., No. 3; 10 per cent., No. 4	1,720 pounds.
12	John B. Vande Wiele	do	50 per cent., No. 2; 50 per cent., No. 3	1,500 shoes.
13	E. J. Spaulding	N. W. N. Company	Nos. 1, 2, and 3, equal proportions	1,200 shoes.
14	D. Madden	Globe	15 per cent., No. 1; 50 per cent., No. 2; 35 per cent., No. 3	
15	Lewis Merrill			
16	A. G. Brackett			
17	H. W. Wessels, jr	Putnam	Nos. 2, 3, and 4, equal proportions	1,200 pounds.
18	James Oakes	Globe	8 per cent., No. 1; 44 per cent., No. 2; 44 per cent., No. 3; 4 per cent., No. 4.	
19	James Biddle	do		
20	A. D. King			1,000 pounds.
21	Thomas H. Neill	N. W. N. Company		
22	C. E. Compton	Globe	Nos. 2 and 3, equal proportions	1,200.
23	William Harper, jr		19 per cent., No. 1; 45 per cent., No. 2; 36 per cent., No. 3	1,500.
24	John Mix	N. W. N. Company	do	
25	William H. Andrews	Putnam	20 per cent., No. 2; 60 per cent., No. 3; 20 per cent., No. 4	1,000 pounds.
26	Thomas B. Dewees		25 per cent., No. 1; 50 per cent., No. 2; 25 per cent., No. 3	1,600 pounds.
27	G. Russell	N. W. N. Company	30 per cent., No. 2; 60 per cent., No. 3; 10 per cent., No. 4	1,000.
28	H. H. Crews		20 per cent., No. 1; 50 per cent., No. 2; 30 per cent., No. 3	2,000 pounds.
29	William B. Kennedy			
30	John Lee		35 per cent., No. 1; 65 per cent., No. 2	
31	John P. Hatch			
32	B. H. Grierson	Globe	25 per cent., No. 1; 50 per cent., No. 2; 25 per cent., No. 3	
33	Thomas McGregor	do	Nos. 2 and 3, equal proportions	1,200 pounds.
34	C. B. McLellan	do	35 per cent., No. 2; 65 per cent., No. 3	
35	A. D. B. Smead	N. W. N. Company	Nos. 1, 2 and 3, equal proportions	
36	D. S. Gordon	do	230, No. 1; 500, No. 2; 300, No. 3; 170, No. 4	1,200 pounds.
37	Joseph Lawson	Globe	Nos. 2 and 3, equal proportions	1,200 pounds.
38	J. I. Gregg	do	5 per cent., No. 1; 45 per cent., No. 2; 45 per cent., No. 3; 5 per cent., No. 4.	
39	Emmet Crawford	Putnam	49 per cent., No. 2; 49 per cent., No. 3; 2 per cent., No. 4	1,425.
40	T. C. Tupper	Globe	Nos. 2 and 3, equal proportions	1,400 pounds.
41	Washington L. Elliott			
42	J. Scott Payne	Globe	Nos. 2 and 3, equal proportions	900 pounds.
43	S. M. Whitside	do	do	
44	C. G. Gordon	N. W. N. Company	7 per cent., No. 1; 30 per cent., No. 2; 25 per cent., No. 3; 5 per cent., No. 4.	675.
45	Alvan C. Gillem	Globe		
46	J. McAllister		Nos. 2 and 3, equal proportions	1,000 pounds.
47	John V. Du Bois			
48	William R. Harmon	Globe	38 per cent., No. 2; 45 per cent., No. 3; 17 per cent., No. 4	1,800 pounds.
49	H. E. Tutherly	do	75 per cent., No. 2; 25 per cent., No. 3	

ABSTRACT G.—*Abstract of the opinions of officers, &c.*—Continued.

Number of the original paper hereto appended.	Names of officers.	Horseshoes.		
		What manufacture of horseshoe-nails preferred.	What sizes to be issued, and what proportion of each size.	What amount necessary for a six months' supply.
50	Frank U. Robinson		20 per cent., No. 1; 60 per cent., No. 2; 20 per cent., No. 3	1,200.
51	Charles D. Viele	Globe	40 per cent., No. 2; 50 per cent., No. 3; 10 per cent., No. 4	1,720 pounds.
52	William McCleave	do	Nos. 2 and 3, equal proportions	
53	R. F. Bernard	U. B. Dobbins	20 per cent., No. 1; 60 per cent., No. 2; 20 per cent., No. 3	1,080 pounds.
54	Louis T. Morris	Globe	Nos. 2 and 3, equal proportions	
55	E. R. Wells		20 per cent., No. 1; 60 per cent., No. 2; 20 per cent., No. 3	
56	C. H. Carlton			
57	O. W. Budd	Globe	40 per cent., No. 1; 40 per cent., No. 2; 20 per cent., No. 3	1,000 pounds.
58	A. E. Wood	do	do	500 pounds.
59	A. P. Morrow			
60	C. Mauck		20 per cent., No. 1; 50 per cent., No. 2; 30 per cent., No. 3	2,000 pounds.
61	Wesley Merritt			
62	Henry E. Noyes	N. W. N. Company	40 per cent., No. 2; 40 per cent., No. 3; 20 per cent., No. 4	1,000 pounds.
63	Alexander Sutorius	Globe	10 per cent., No. 1; 40 per cent., No. 2; 40 per cent., No. 3; 10 per cent., No. 4.	2,000 pounds.
64	S. B. M. Young	do	Nos. 2 and 3, equal proportions	
65	Thomas C. Devin			
66	G. W. Schofield			
67	Byron Dawson	N. W. N. Company	20 per cent., No. 1; 35 per cent., No. 2; 35 per cent., No. 3; 10 per cent., No. 4.	600 pounds.
68	Charles Meinhold	do	13 per cent., No. 1; 58 per cent., No. 2; 29 per cent., No. 3	1,400.
69	F. S. Dodge			
70	Michael Cooney		40 per cent., No. 1; 40 per cent., No. 2; 10 per cent., No. 3; 10 per cent., No. 4.	1,000 pounds.
71	Nicholas Nolan			
72	Anson Mills	N. W. N. Company	25 per cent., No. 2; 50 per cent., No. 3; 25 per cent., No. 4	
73	Andrew J. Alexander		Nos. 2 and 3, equal proportions	
74	A. B. Kauffman		Nos. 1 and 2, equal proportions	
75	William W. Tyler	Globe	13 per cent., No. 1; 75 per cent., No. 2; 12 per cent., No. 3	1,200 pounds.
76	John Q. Adams	Putnam	50 per cent., No. 2; 40 per cent., No. 3; 10 per cent., No. 4	1,200 pounds.
77	Peter M. Boehm	Globe	40 per cent., No. 1; 40 per cent., No. 2; 20 per cent., No. 3	
78	Samuel S. Sumner	Griffin—6, 7, 8	8 per cent., No. 1; 42 per cent., No. 2; 42 per cent., No. 3; 8 per cent., No. 4.	1,200 pounds.
79	George A. Custer	Globe	29 per cent., No. 1; 42 per cent., No. 2; 29 per cent., No. 3	
80	Myles Moylan	do	do	
81	George W. Yates	do	do	
82	William Thompson	do	do	
83	Donald McIntosh	do	do	
84	Thomas W. Custer	do	do	
85	John F. Weston	do	do	
86	Thomas M. McDougall	do	do	
87	Benjamin H. Hodgson	do	do	
88	Charles A. Varnum	do	do	
89	George D. Wallace	do	do	
90	William T. Craycroft	do	do	
91	G. C. Doane	Putnam	10 per cent., No. 1; 45 per cent., No. 2; 45 per cent., No. 3	
92	E. G. Mathey	N. W. N. Company	do	
93	William H. Brown	Union Pacific		
94	Robert P. Wilson	A. Graham	50 per cent., No. 1; 50 per cent., No. 2	2,500 pounds.
95	Edmund Luff			
96	James G. MacAdams	N. W. N. Company	25 per cent., No. 1; 50 per cent., No. 2; 25 per cent., No. 3	
97	N. B. Sweitzer			

ABSTRACT G.—*Abstract of the opinions of officers, &c.*—Continued.

Number of the original paper hereto appended.	Names of officers.	What manufacture of horseshoe-nails preferred.	Horseshoes.	
			What sizes to be issued, and what proportion of each size.	What amount necessary for a six months' supply.
98	Lewis Thompson	N. W. N. Company	25 per cent., No. 1; 50 per cent., No. 2; 25 per cent., No. 3	400 pounds.
99	G. L. Tyler	do		1,200 shoes.
100	A. B. Wells	Putnam		800 pounds.
101	James Egan	Burden		1,200.
102	James F. Wade	Globe		
103	William Gerhard	do		1,200 pounds.
104	Francis Moore	do	250, No. 1; 750, No. 2; 200, No. 3	1,200 pounds.
105	John T. Morrison			
106	Thomas Little			
107	Thomas J. Spencer			
108	Thomas C. Lebo			
109	George H. Evans			
110	Frank P. Reap			
111	James F. Randlett	Globe		
112	Elmer Otis	Putnam	¼ No. 1; ⅜ No. 2; ⅜ No. 3	300 pounds.
113	J. G. Trimble	do		300 pounds.
114	Edw. S. Godfrey	N. W. N. Company	300, No. 1; 200, No. 2; 100, No. 3	600 pounds.
115	Sebastian Gunther	Globe	50 per cent., No. 1; 50 per cent., No. 2	800 pounds.
116	Eng. A. Carr	Ausable		
117	Charles C. Cresson	Goodenough		1,200 pounds.
118	C. C. C. Carr	do		
119	Oscar Hagen	Globe		
120	S. D. Sturgis	do	Nos. 2, 3, and 4, equal proportions	
121	F. K. Upham	Putnam		
122	Moses Harris	do		
123	Charles D. Parkhurst	do	25 per cent., No. 1; 50 per cent., No. 2; 25 per cent., No. 3	1,200.
124	A. E. Latimer	Globe	600, No. 1; 400, No. 2; 200, No. 3	1,200.
125	R. H. Montgomery	Graham	15 per cent., No. 1; 15 per cent., No. 2; 35 per cent., No. 3	600 pounds.
126	George A. Drew	Putnam	65 per cent., No. 2; 35 per cent., No. 3	
127	N. A. M. Dudley	Globe	50 per cent., No. 2; 50 per cent., No. 3	1,200 pounds.

ABSTRACT G.—*Abstract of the opinions of officers, &c.*—Continued.

Number of the original paper hereto appended.	Names of officers.	Additions or changes proposed in kind and amount in the saddlers' tools.	Additions or changes proposed in kind and amount in the smiths' tools.	Saddlers' horse, separate clamp.		Additions or changes proposed in saddlers' materials for a six months' supply.
				In favor of retaining it.	In favor of dispensing with it.	
1	William B. Royall			....	1	Increased issue.
2	Henry Wagner		Add 2 toe-knives	1	....	Bridle-leather increased 100 per cent.
3	Joseph Kerin			....	1	
4	A. P. Caraher			....	1	Increase of leather.
5	L. H. Orleman	More awl-handles and straight punches.	Add 1 shoeing-hammer and 1 rasp per month.	1	....	Amount of leather doubled.
6	R. H. Pratt			1	....	Increased issue.
7	Abraham K. Arnold			....	....	
8	Robert G. Smither			1	....	Double amount of material; six times the amount of leather.
9	Theo. A. Baldwin			1	....	Increased issue.
10	S. T. Norvell			....	....	100 pounds leather; 5 pounds copper rivets and burrs.
11	J. W. Davidson	More awl-handles and straight punches.		....	....	Increased issue.
12	John B. Vande Wiele			....	1	Present supply doubled.
13	E. J. Spaulding	1 saddlers' horse; hand-punches, from 1 to 12; 1 rounding-iron; 1 pair shears.	75 pounds iron; 10 pounds cast steel; ½ dozen rasps; 6 assorted files; 2 paring-knives.	....	1	1 paper tacks, 6 and 12; 1 pound copper rivets and burrs, ¾-inch; 2 pounds copper rivets and burrs, ½-inch; 25 yards webbing; 150 pounds harness and 50 pounds bridle leather.
14	D. Madden			....	1	
15	Lewis Merrill			....	1	Increased issue of rivets and burrs.
16	A. G. Brackett			....	1	Increased issue.
17	H. W. Wessels, jr			....	1	Increased issue of bridle leather.
18	James Oakes	More needles		....	1	Increased issue of harness and bridle leather.
19	James Biddle			....	....	
20	A. D. King		12 horseshoe-rasps	1	....	8 sides bridle leather; 60 pounds harness leather; 8 papers tacks; 3 papers copper rivets and burrs; 1 pound black-wax; ½ pound beeswax; 3 pounds shoe-thread; 2 pounds patent linen thread.
21	Thomas H. Neill			....	....	150 pounds harness leather; 200 pounds bridle eather.
22	C. E. Compton		½ dozen round files, 1½-inch wide, 15 inches long.	....	....	Increase of harness and bridle leather.
23	William Harper, jr			1	....	60 pounds harness leather; 50 pounds bridle leather; 6 papers tacks, 6 and 12; 6 dozen ¾-inch roller-buckles.
24	John Mix			1	....	
25	William H. Andrews	3 patent awls; needles, No. 3; oil-can; scissors; glass slicker; canvas-needles; 1 collar-palm; 1 counter-punch.	4 rasps; 3 farrier-knives	....	1	6 pounds shoe-thread, Barbour black, No. 3; 1 paper tacks, 10; 3 pounds black-wax; 30 pounds bridle leather; 25 pounds harness leather; collar-leather; needles; 1 pound ½-inch copper rivets and burrs; 1 ticking-apron; 1 pint sweet-oil; ½ pound copperas.

ABSTRACT G.—*Abstract of the opinions of officers, &c.*—Continued.

Number of the original paper hereto appended.	Names of officers.	Additions or changes proposed in kind and amount in the saddlers' tools.	Additions or changes proposed in kind and amount in the smiths' tools.	Saddlers' horse, separate clamp.		Additions or changes proposed in saddlers' materials for a six months' supply.
				In favor of retaining it.	In favor of dispensing with it.	
26	Thomas B. Dewees			1	....	Increase of leather and copper rivets and burrs.
27	G. Russell			....	1	6 pounds shoe-thread; 2 pounds linen thread; 2 pounds beeswax; 3 pounds black-wax; 30 pounds bridle leather; 100 pounds harness leather; 4,000 tacks, 6 and 12; 6 pounds copper rivets and burrs; 50 bar-buckles, ¾-inch; 70 half-round buckles, ⅝-inch; 50 bar-buckles, 1½-inch; 30 halter-rings; 50 roller-buckles, 1¼-inch; 1 bolt girth-webbing; 2 galls. Collins' oil.
28	H. H. Crews			1	....	Increase of leather.
29	William B. Kennedy			1	....	Do.
30	John Lee			....	1	3 to 4 sides bridle leather; 100 pounds harness leather.
31	John P. Hatch			....	....	60 pounds bridle leather; 120 pounds harness leather; 6 pounds copper rivets and burrs; 6 gallons neats-foot oil.
32	B. H. Grierson			....	1	
33	Thomas McGregor	Collar-palm	6 rasps; 1 knife	....	1	25 pounds bridle leather; 35 pounds harness leather.
34	C. B. McLellan			....	1	Increase of leather and neats-foot oil.
35	A. D. B. Smead		6 rasps	1	....	30 pounds harness and 20 pounds bridle leather.
36	D. S. Gordon		Increase of rasps and shoeing-knives.	1	....	250 pounds harness and 100 pounds bridle leather; 1 gross buckles, 1¼-inch; 1 gross halter-squares; ½ gross ⅝-inch buckles.
37	Joseph Lawson			....	1	Increase of leather.
38	J. I. Gregg		Better quality of tools	....	1	Amount of leather doubled.
39	Emmet Crawford		3 rasps; 1 pair tongs; 1 hammer; 2 shoeing-knives; 1 whetstone; 1 pointing-hammer.	1	....	30 pounds harness-leather.
40	T. C. Tupper		6 rasps and 6 half-round files.	....	1	Increase of leather and copper rivets and burrs.
41	Washington L. Elliott			....	....	
42	J. Scott Payne			....	....	75 pounds bridle and harness leather; 4 dozen assorted buckles.
43	S. M. Whitside			....	1	Increase of leather.
44	C. G. Gordon			....	1	200 pounds harness and 150 pounds bridle leather.
45	Alvan C. Gillem	Collar-palm	2 toe-knives and ½ doz. rasps.	1	....	Increase of leather; 2 pounds ¾-inch copper rivets and burrs, 10 and 12.
46	J. McAllister	2 shoe-knives; 1 collar-palm; 2 collar-needles; 1 thimble.		....	1	5 pounds shoe-thread; 4 pounds linen thread; 14 papers tacks; ½ pound beeswax; 70 pounds bridle-leather; 85 pounds harness-leather; 11 pounds copper rivets and burrs.

ABSTRACT G.—*Abstract of the opinions of officers, &c.*—Continued.

Number of the original paper hereto appended.	Names of officers.	Additions or changes proposed in kind and amount in the saddlers' tools.	Additions or changes proposed in kind and amount in the smiths' tools.	Saddlers' horse, separate clamp.		Additions or changes proposed in saddlers' materials for a six months' supply.
				In favor of retaining it.	In favor of dispensing with it.	
47	John V. DuBois		6 rasps	1		Increase of leather.
48	William R. Harmon		1 shoeing-hammer; 2 rasps	1		Twice the amount now issued necessary.
49	H. E. Tutherly		6 rasps and 1 toe-knife		1	55 pounds harness-leather, 20 pounds bridle-leather.
50	Frank U. Robinson					Increase of leather.
51	Charles D. Viele	Increase of awl-handles and straight punches.				Double amount of the present allowance.
52	William McCleave				1	Double quantity of leather and tacks; 6 pounds copper rivets and burrs.
53	R. F. Bernard				1	35 pounds harness-leather.
54	Louis T. Morris		1 sledge-hammer		1	Three times amount of leather now issued.
55	E. R. Wells			1		6 papers tacks, 6 and 12; 5 pounds copper rivets and burrs; 2 pounds bees-wax; 4 papers needles, 3, 4, 5, and 6; 3 pounds black-wax; 1 paper sailmakers' needles; 100 pounds bridle-leather; 200 pounds harness-leather; 25 pounds Collins's oil.
56	C. H. Carlton					
57	O. W. Budd		Smaller hoof-knife		1	100 pounds harness and 100 pounds bridle leather.
58	A. E. Wood		Lighter hoof-knife		1	80 pounds harness and 50 pounds bridle leather.
59	A. P. Morrow				1	Double amount of bridle-leather.
60	C. Mauck			1		1 pound shoe-thread; 1 pound patent linen thread; 2 papers tacks; ½ pound bees-wax; 1 pound black-wax; 90 pounds bridle-leather; 185 pounds harness-leather; 11 pounds copper rivets and burrs.
61	Wesley Merritt				1	
62	Henry E. Noyes				1	Increase of leather.
63	Alexander Sutorius	1 rounding-iron	6 rasps, 14 inches long; 4 feet of 8-cornered ⅝-inch steel, for punches.		1	2 pounds shoe-thread; 1 pound patent linen thread; 40 pounds bridle-leather; 85 pounds harness-leather; 1 pound 1½-inch copper rivets and burrs.
64	S. B. M. Young		1 sledge-hammer		1	Three times the amount of leather.
65	Thomas C. Devin			1		Double amount of leather.
66	G. W. Schofield				1	Increase of leather.
67	Byron Dawson				1	Do.
68	Charles Meinhold		6 shoeing-rasps	1		50 pounds harness, 50 pounds bridle, and 20 pounds collar leather.
69	F. S. Dodge		1 pair clinching-tongs; 1 toe-knife; 1 shoeing-hammer; more rasps.	1		Increase of leather.
70	Michael Cooney			1		Increase of leather; 5 pounds copper rivets and burrs.
71	Nicholas Nolan		Kunun's clinching-iron.	1		50 pounds bridle and 75 pounds harness leather; 5 pounds copper rivets and burrs.

ABSTRACT G.—*Abstract of the opinions of officers, &c.*—Continued.

Number of the original paper hereto appended.	Names of officers.	Additions or changes proposed in kind and amount in the saddlers' tools.	Additions or changes proposed in kind and amount in the smiths' tools.	Saddlers' horse, separate clamp.		Additions or changes proposed in saddlers' materials for a six months' supply.
				In favor of retaining it.	In favor of dispensing with it.	
72	Anson Mills		6 shoeing-rasps	1	....	50 pounds harness, 25 pounds bridle, and 20 pounds collar leather.
73	Andrew J. Alexander			....	1	
74	A. B. Kauffman			....	1	
75	William W. Tyler			....	1	
76	John Q. Adams			1	....	
77	Peter M. Boehm		Hoof-knife to be smaller	....	1	100 pounds harness and 100 pounds bridle leather.
78	Samuel S. Sumner			1	....	20 pounds bridle and 30 pounds harness leather; 2 pounds copper rivets and burrs.
79	George A. Custer			1	....	75 pounds harness and 100 pounds bridle leather.
80	Myles Moylan			1	....	Do.
81	George W. Yates			1	....	Do.
82	William Thompson			1	....	Do.
83	Donald McIntosh			1	....	Do.
84	Thomas W. Custer			1	....	Do.
85	John F. Weston			1	....	Do.
86	Thomas M. McDougall			1	....	Do.
87	Benjamin H. Hodgson			1	....	Do.
88	Charles A. Varnum			1	....	Do.
89	George D. Wallace			1	....	Do.
90	William T. Craycroft			1	....	Do.
91	G. C. Doane			....	1	Double amount of leather.
92	E. G. Mathey	Increase of awls; 1 splitting-gauge.		....	1	Increase of leather.
93	William H. Brown			....	1	Increase 2 pounds patent thread; 1½ pounds beeswax; 100 pounds bridle, 50 pounds harness, and 50 pounds collar leather; 5 pounds rivets and burrs.
94	Robert P. Wilson			....	1	Double amount of material.
95	Edmund Luff			....	1	
96	James G. MacAdams		Steel-pinchers, L. K. L.; shoeing-knife; hog-skin apron.	....	1	3 pounds patent linen thread; 3 pounds black-wax; 45 pounds harness-leather; 3 pounds ½ and ¾ inch copper rivets and burrs; 3,000 Nos. 6 and 12 tacks; 15 pounds bridle-leather; 15 pounds collar-leather.
97	N. B. Sweitzer			....	....	
98	Lewis Thompson			1	....	
99	G. L. Tyler		Needles, Nos. 2, 3, 4	....	1	1 paper Glovers' needles; 2 pounds ½-inch copper rivets and burrs; 1 pound ¾-inch copper rivets and burrs.
100	A. B. Wells			....	1	

ABSTRACT G.—*Abstract of the opinions of officers, &c.*—Continued.

Number of the original paper hereto appended.	Names of officers.	Additions or changes proposed in kind and amount in the saddlers' tools.	Additions or changes proposed in kind and amount in the smiths' tools.	Saddlers' horse, separate clamp.		Additions or changes proposed in saddlers' materials for a six months' supply.
				In favor of retaining it.	In favor of dispensing with it.	
101	James Egan	Double tickler; single tickler; patent leather compasses; patent leather gauge; French edge-tool; 12 block-punches; rounding-iron; sandstone; channeler; collar-awl; shoe-hammer; cold-chisel; sail-cloth needle; 3-cornered files; 1 pair bull-head pinchers.			1	Increase of leather.
102	James F. Wade				1	
103	William Gerhard		Increase ½ dozen farriers' knives.		1	100 pounds bridle and 60 pounds harness-leather.
104	Francis Moore		do		1	60 pounds bridle and 100 pounds harness-leather.
105	John T. Morrison					
106	Thomas Little					
107	Thomas J. Spencer					
108	Thomas C. Lebo					
109	George H. Evans					
110	Frank P. Reap					
111	James F. Randlett			1		Increase of material.
112	Elmer Otis	1 straining-fork; 1 seat-steel; 6 pricking-irons; 1 shoe-hammer; 12 stamps; 1 web-strainer; 1 slicker; 1 pair pinchers; 1 pair pliers; 1 rule; 2 creasers; 1 double-creaser; 12 punches; 1 rounding-iron; 1 round-knife; 1 head-knife; 1 tack-hammer; 1 claw-tool; 6 awls and handles; 1 seat-awl; 1 tickler; 1 riveting-hammer; 1 rivet-set; 1 edge-tool, No. 4; 24 seaming-needles; 24 Glovers' needles; 1 screw-driver; 1 gauge-knife; 1 splitting-gauge; 1 patent-leather gauge; 1 backing-awl; 1 collar-awl; 1 rasp; 1 channeler; 1 patent-leather compasses; 1 divider; 1 mallet; 12 pricking-wheels; 1 pricking-wheel handle; 1 stitching-horse; 6 bag-punches; 1 pair cutting-nippers; 1 vise, 5-inch jaws.		1		Increase of leather and material.
113	J. G. Trimble			1		Increase of leather and pig-skins.
114	Edw. S. Godfrey		Steel-pinchers instead of iron.		1	Increase of material.

ABSTRACT G.—*Abstract of the opinions of officers, &c.*—Continued.

Number of the original paper hereto appended.	Names of officers.	Additions or changes proposed in kind and amount in the saddlers' tools.	Additions or changes proposed in kind and amount in the smiths' tools.	Saddlers' horse, separate clamp.		Additions or changes proposed in saddlers' materials for a six months' supply.
				In favor of retaining it.	In favor of dispensing with it.	
115	Sebastian Gunther		1 sledge-hammer		1	3 sides bridle-leather; 200 pounds harness-leather; 3 pounds shoe-thread; 3 pounds patent linen thread; 4,000 tacks; 100 iron buckles, assorted.
116	Eug. A. Carr	1 pad-awl; 1 creaser, lignum-vitæ; 1 patent compasses; 1 hammer, with claw; 1 patent awl-handle; 1 shoe-knife; 1 paper needles, No. 5, for patent thread; 1 sandstone; 1 hand-punch, No. 6; 1 patent rule.	1 pair clinching-tongs		1	15 pounds bridle-leather; 35 pounds harness-leather; 2 dozen cavalry buckles, 2 of each kind.
117	Charles C. Cresson			1		Double amount of bridle and harness leather.
118	C. C. C. Carr			1		
119	Oscar Hagen			1		Double amount of leather.
120	S. D. Sturgis	1 splitting-machine		1		Increase of leather.
121	F. K. Upham			1		Increase of leather; double amount of material.
122	Moses Harris		1 dozen rasps	1		50 pounds harness and 20 pounds bridle leather; double amount of material.
123	Charles D. Parkhurst				1	Double amount of leather.
124	A. E. Latimer		1 clinching-tongs; 4-faced hand-hammer; smaller hoof-knife.		1	Increase of leather; double amount of rivets and burrs.
125	R. H. Montgomery				1	Double amount of leather.
126	George A. Drew			1		Increase of leather.
127	N. A. M. Dudley				1	Twice the amount of leather.

ABSTRACT G.—*Abstract of the opinions of officers, &c.*—Continued.

Number of the original paper hereto appended.	Names of officers.	Is the quantity of horse-shoe-nails as now issued sufficient for a six months' supply?			Collins' prepared oil.	Neats-foot oil.	General suggestions.
		Yes.	No.	What amount necessary.	In favor of.	In favor of.	
1	William B. Royall	1					Sends drawing of curb-bit.
2	Henry Wagner		1	100 pounds			
3	Joseph Kerin					1	Issue of tripoli, emery-cloth, emery-powder, and sweet-oil.
4	A. P. Caraher	1				1	
5	L. H. Orleman	1				1	Horn-combs for horses, knapsacks for soldiers' clothing.
6	R. H. Pratt		1	75 pounds			
7	Abraham K. Arnold					1	
8	Robert G. Smither		1			1	Box for clothing.
9	Theo. A. Baldwin					1	
10	S. T. Norvell	1					Nose-bags.
11	J. W. Davidson		1	Nos. 7, 8, 9, 121 pounds.		1	
12	John B. Vande Wiele		1	125 pounds	1		
13	E. J. Spaulding		1	75 pounds	1		
14	D. Madden					1	Sends a bit, picket-pin, and pattern for sweat-leathers.
15	Lewis Merrill						Sends detailed answer on question No. 14.
16	A. G. Brackett		1				
17	H. W. Wessels, jr		1	125 pounds			
18	James Oakes		1			1	
19	James Biddle						
20	A. D. King		1	100 pounds	1		
21	Thomas H. Neill		1				All buckles and rings to be made of brass.
22	C. E. Compton	1					
23	William Harper, jr		1	100 pounds		1	Nose-bags; 500 sheets emery-cloth; 500 sheets sand-paper.
24	John Mix		1	80 pounds	1		Nose-bags; all metal parts of equipments to be nickel-plated.
25	William H. Andrews		1				
26	Thomas B. Dewees	1			1		
27	G. Russell					1	Issue of breast-straps and horse-blankets.
28	H. H. Crews		1	200 pounds			
29	William B. Kennedy		1			1	Sends detailed answers on questions Nos. 1 and 13.
30	John Lee		1	75 pounds			
31	John P. Hatch					1	
32	B. H. Grierson	1					Sends drawing of Kiernan's improved horseshoe.
33	Thomas McGregor	1					
34	C. B. McLellan	1				1	
35	A. D. B. Smead		1		1		Horse-blankets for northern climates.
36	D. S. Gordon		1	75 pounds			
37	Joseph Lawson		1		1		
38	J. I. Gregg	1					Properly organized pack-train and suitable equipments.
39	Emmet Crawford		1	100 pounds			Horse-blanket, nose-bags, black leather to cover stirrups.
40	T. C. Tupper	1					
41	Washington L. Elliott						Nose-bags.
42	J. Scott Payne		1	75 pounds		1	
43	S. M. Whitside		1	75 pounds	1		Tripoli, emery-cloth, emery-powder, and linseed-oil.
44	C. G. Gordon		1			1	
45	Alvan C. Gillem	1				1	Issue of horseshoes to be given to the Quartermaster's Department.
46	J. McAllister						Do.
47	John V. Du Bois					1	Buck-gauntlets and buffalo-shoes for soldiers serving North. Sends drawing of bit.
48	William R. Harmon	1				1	

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ABSTRACT G.—*Abstract of the opinions of officers, &c.*—Continued.

Number of the original paper hereto appended.	Names of officers.	Is the quantity of horse-shoe-nails as now issued sufficient for a six months' supply?			Collins' prepared oil.	Neats-foot oil.	General suggestions.
		Yes.	No.	What amount necessary.	In favor of.	In favor of.	
49	H. E. Tutherly						Hoods of stirrups to be one-third larger.
50	Frank U. Robinson	1				1	Do.
51	Charles D. Viele		1	121 pounds		1	Old carbine-sling.
52	William McCleave	1			1		Nose-bags, hoods, and stirrups to extend one inch lower.
53	R. F. Bernard			60 pounds			Sends pattern of scouting-belt.
54	Louis T. Morris	1			1		Hoods to be dispensed with. Smooth spurs.
55	E. R. Wells	1			1		Old carbine-sling. Sends pattern of scouting-belt.
56	C. H. Carlton						
57	O. W. Budd		1	150 pounds		1	Nickel-plated bits.
58	A. E. Wood	1				1	Howitzer-forge on a larger scale.
59	A. P. Morrow	1					
60	C. Mauck		1	200 pounds			Issue of better leather. Sends drawing of curb-bit.
61	Wesley Merritt		1			1	
62	Henry E. Noyes		1	100 pounds	1		Sends model of picket-pin, curb-bit, and lariat, made by A. I. House, first sergeant Company I, Second Cavalry.
63	Alexander Sutorius	1					All buckles and rings to be made of brass.
64	S. B. M. Young	1			1		Hoods dispensed with; stirrups leather-covered.
65	Thomas C. Devin		1				A copy of a good work on veterinary surgery.
66	G. W. Schofield						Detailed suggestions on the automatic ejector.
67	Byron Dawson		1	100 pounds		1	Bits nickel-plated.
68	Charles Meinhold		1		1		
69	F. S. Dodge	1					
70	Michael Cooney		1	100 pounds			Brass-plated bits.
71	Nicholas Nolan		1	100 pounds			Brass-plated bits and buckles.
72	Anson Mills		1		1		
73	Andrew J. Alexander						Wooden stirrups to be made 4½ inches deep. Sends pattern of curb-bit and side-lines.
74	A. B. Kauffman	1					Old carbine-sling; carbine-boot to be made to carry weight of carbine.
75	William W. Tyler		1		1		
76	John Q. Adams		1	75 pounds			
77	Peter M. Boehm		1	150 pounds		1	
78	Samuel S. Sumner		1	75 pounds		1	Brass buckles and bits.
79	George A. Custer	1				1	Nose-bags; wide sling-belt; saddle-blanket one-third larger.
80	Myles Moylan	1				1	Do.
81	George W. Yates	1				1	Do.
82	William Thompson	1				1	Do.
83	Donald McIntosh	1				1	Do.
84	Thomas W. Custer	1					Do.
85	John F. Weston	1					Do.
86	Thomas M. McDougall	1					Do.
87	Benjamin H. Hodgson	1					Do.
88	Charles A. Varnum	1					Do.
89	George D. Wallace	1					Do.
90	William T. Craycroft	1					Do.
91	G. C. Doane	1					Nose-bags; deeper stirrups.
92	E. G. Mathey		1	75 pounds			
93	William H. Brown	1					
94	Robert P. Wilson	1				1	
95	Edmund Luff				1		
96	James G. MacAdams		1	75 pounds	1		Larger saddle-blankets.
97	N. B. Sweitzer				1		

ABSTRACT G.—*Abstract of the opinions of officers, &c.*—Concluded.

Number of the original paper hereto appended.	Names of officers.	Is the quantity of horse-shoe-nails as now issued sufficient for a six months' supply?			Collins' prepared oil.	Neats-foot oil.	General suggestions.
		Yes.	No.	What amount necessary.	In favor of.	In favor of.	
98	Lewis Thompson		1	80 pounds	1		Supplies of equipments and material left at post.
99	G. L. Tyler		1	100 pounds	1		Larger saddle-blankets. Sends pattern of scouting-belt.
100	A. B. Wells	1				1	
101	James Egan	1			1		Nickel-plated bits and link-straps.
102	James F. Wade	1				1	Nickel or brass plated bits and buckles.
103	William Gerhard	1					Hoods of stirrups to be suspended, with stirrups broader and stronger.
104	Francis Moore	1				1	
105	John T. Morrison					1	Heavier saddle-blankets.
106	Thomas Little					1	Do.
107	Thomas J. Spencer					1	Do.
108	Thomas C. Lebo					1	Do.
109	George H. Evans					1	Do.
110	Frank P. Reap					1	Do.
111	James F. Randlett		1		1		Sends drawing of curb-bit.
112	Elmer Otis				1		
113	J. G. Trimble		1		1		
114	Edw. S. Godfrey		1		1		Hoods of the stirrups to be deeper.
115	Sebastian Gunther	1				1	Add for 1 company, 6 months' supply: 4 quires emery-cloth, 6 pounds rotten-stone, 1 gallon oil, 4 gallons neats-foot or Collins' oil.
116	Eug. A. Carr		1	250 pounds	1		Stirrup-covers to be deeper, saddle-bags larger.
117	Charles C. Cresson	1				1	Nose-bag.
118	C. C. C. Carr						All buckles, rings, &c., to be made of brass.
119	Oscar Hagen	1					
120	S. D. Sturgis						
121	F. K. Upham		1				Monthly supply of horseshoes and nails.
122	Moses Harris		1	75 pounds			Saddles covered with black leather; all metal parts brass-plated.
123	Charles D. Parkhurst		1	120 pounds			McClellan saddle-tree covered with black leather. Sends drawing of curb-bit and pistol-holster.
124	A. E. Latimer		1	125 pounds			Detailed answer on question 13; 12 pack-mules, with saddles fitted and numbered for each company of cavalry.
125	R. H. Montgomery	1					
126	George A. Drew						
127	N. A. M. Dudley		1	90 pounds	1		Wide sling-belt; larger saddle-blankets; canvas horse-cover to be issued.

SUMMARY PERTAINING TO ABSTRACT G.

Summary of the opinions of cavalry officers, as set forth in their answers to the questions propounded by the Board on Cavalry Equipments.

Numbers.	Sweat-leathers and saddle-skirts.		Girth.		Fastening for girth.		Saddle-bag.		Recommendations on the curb-bit.		Light halter-chain, in addition to leather halter-strap.		Recommendations on the curry-comb.		Recommendations on the horse-brush.	
	In favor of.	Against.	Hair girth.	Pres'nt girth.	Cincha-strap fastening.	Buckle fastening.	Leather.	Canvas.			In favor of.	Against.				
1 to 127	36	85	95	28	71	56	105	19	Lighter bit	27	87	35	Strap	15	Leather back	65
									Present bit, (steel)	20			Better quality	26	Better quality of hair	34
									Old dragoon bit	11			Open back	6	Rubber back	1
									Milder bit	7			Rubber brush comb	2	Martin's brush.	1
									Shoemaker bit	7			Smaller size	2		
									Daniels' bit	7			Hutchings & Sons	1		
									Grimsley bit	3						
									Brass bit	3						
									Old Kearney bit	2						
									Jenifer bit	1						
									Burdoon bit	1						
									Straight steel branches	1						
									Smaller bit	1						
									Roberts bit	1						
									Baldwin bit	1						
									Chiffany bit	1						
									Baucher bit	1						
Total.	36	85	95	28	71	56	105	19		95	87	35		52		101

Numbers.	Recommendations on change in the lariat.		Suggestions on change in the picket-pin.		Dark-blue felt saddle-cloth, &c.			Recommendations in regard to side-lines.*		Iron pins three feet long, to fasten picket-line to the ground.		Saber attached by two straps at one point—Stuart's attachment.	Slings—Attachment from two separate points.
	Horse hair.	Change recommended.			In favor of.	Against.	Gray in favor of.			In favor of.	Against.		
1 to 127	82	Manilla rope	18	Fifteen inches long	15	76	27	3	Chains shorter	13	78	35	70	45
		Buffalo hair	7	With swivel	12				Chains to lengthen and shorten	8				
		Buckskin	4	Lyon's patent	9				Hopples	4				
		With swivel	4	Steel	4				Rope	4				
		Hempen rope	2	First serg't Sixth Cav	3				Leather	2				
		Rawhide	1	Col. James Oakes's	2				Halter-shanks	1				
				F. K. Upham's	2									
				Kiernan's	1									
				Blacksmith Mace's	1									
				A. I. House's	1									
				Twelve inches long	1									
Total.	82		36		51	76	27	3		32	78	35	70	45

*Sixty-six opinions; 25 inches average length of chains.

Summary of the opinions of the cavalry officers, as set forth in their answers, &c.—Continued.

Numbers.	Pistol-holster. Flap. In favor of.	Pistol-holster. Strap. In favor of.	Recommendations in regard to the carrying of the ammunition. For use in field.	For use in garrison.	Mountain howitzer forge. In favor of.	Against.	Proposed transportation of forge in a two-wheel'd vehicle. In favor of.	Against.	What manufacture of horseshoes preferred.	What manufacture of horseshoe-nails preferred.	*What amount of horseshoes necessary for a six months' supply.	Saddlers' horse—separate clamp. In favor of retaining it.	In favor of dispensing with it.	Is the quantity of horseshoe-nails as now issu'd sufficient for six months? Yes.	No.	What am't. necessary.†	Collins' prepared harness-oil.	Neats-foot oil.
1 to 127	61	44	Scouting-belt..... 62	Pouch 35	37	23	66	38	Burden 60	Globe..... 48	....	50	58	47	52	....	28	44
.....	....	....	Pouch 38	Scouting-belt.... 24	....	....	....	....	Goodenough. 6	N.W.N.Co. 13	....	.....	.....	....	..	....	.....	..
.....	....	....	Cartridge-vest 1	Box No. 1. 28	....	....	....	....	N. W. N. Co. 3	Putnam .. 11	....	.....	.....	....	..	....	.....	....
.....	....	....	Box K 1	Box No. 2. 1	....	....	....	....	Rhode Island 3	U. B. Dobbins 1	....	.....	.....	....	..	....	.....	....
.....	....	....	.....	Box K 1	....	....	....	....	Perkins..... 2	.....	....	.....	.....	....	..	....	.....	....
.....	....	....	.....	.....	....	....	....	....	Griffith 1	Griffin 1	....	.....	.....	....	..	....	.....	....
.....	....	....	.....	.....	....	....	....	....	Schöenberger & Co... 1	Graham... 1	....	.....	.....	....	..	....	.....	....
.....	....	....	.....	.....	....	....	....	....	.....	Union Pacific ... 1	....	.....	.....	....	..	....	.....	....
.....	....	....	.....	.....	....	....	....	....	Harper's patent 1	Ausable .. 1	....	.....	.....	....	..	....	.....	....
.....	....	....	.....	.....	....	....	....	....	.....	.....	....	.....	.....	....	..	....	.....	....
Total.	61	44	102	89	37	23	66	38	77	77	....	50	58	47	52	....	28	44

* Fifty opinions; 1,177 pounds average amount.

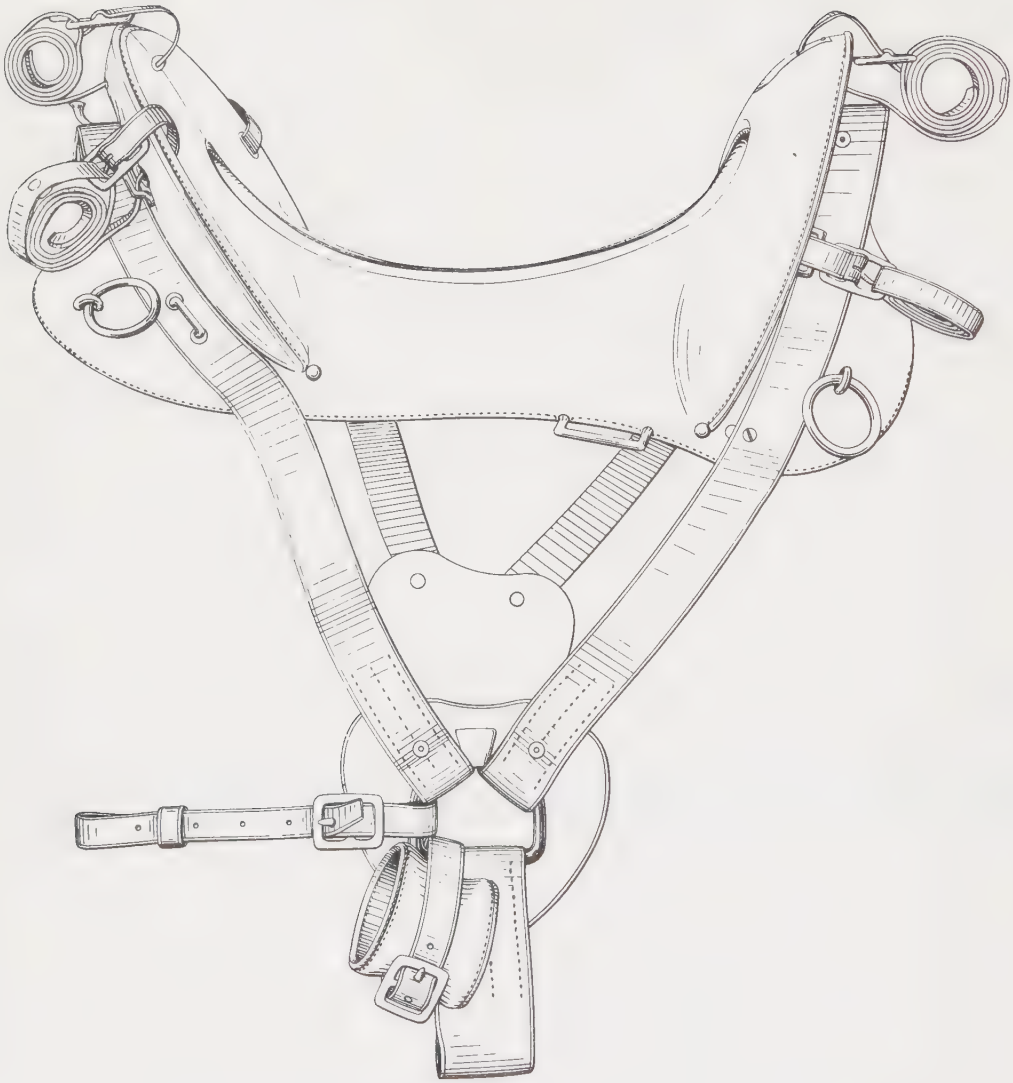
† Thirty-six opinions; 101 pounds average amount.

L. H. CARPENTER, *Captain Tenth Cavalry, Brevet-Colonel,*
Recorder of the Board on Cavalry Equipments, &c.

ILLUSTRATIONS

ACCOMPANYING THE

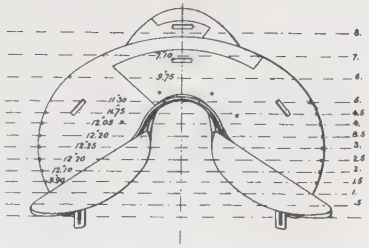
REPORT OF THE BOARD ON CAVALRY-OUTFIT.



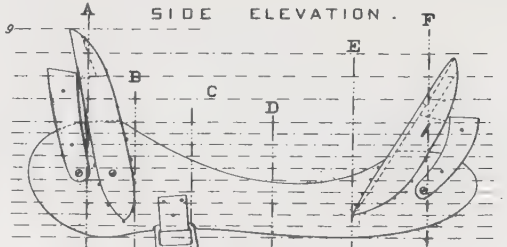
SADDLE TREE, TRIMMED.

SADDLE TREE, DETAILS

REAR ELEVATION.



SIDE ELEVATION.



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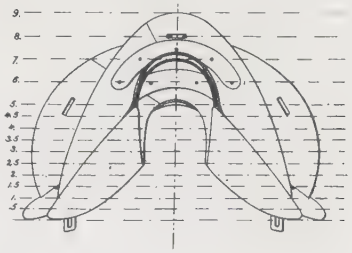
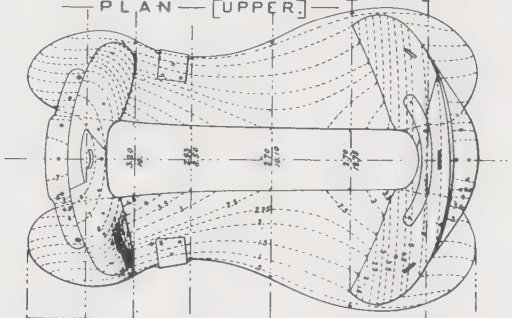
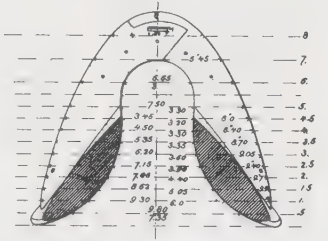


PLAN — [UPPER.]



SECTION ON BB′.



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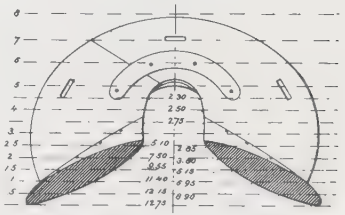

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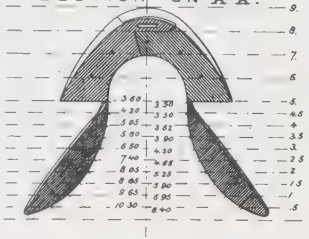

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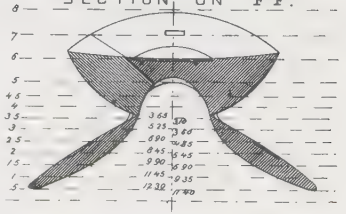
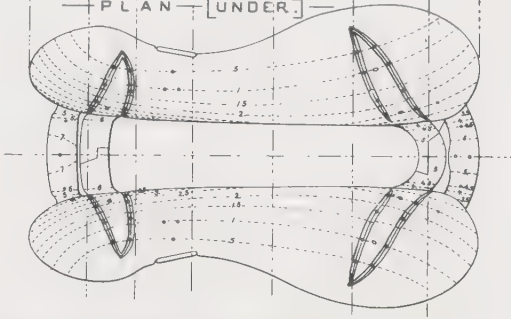
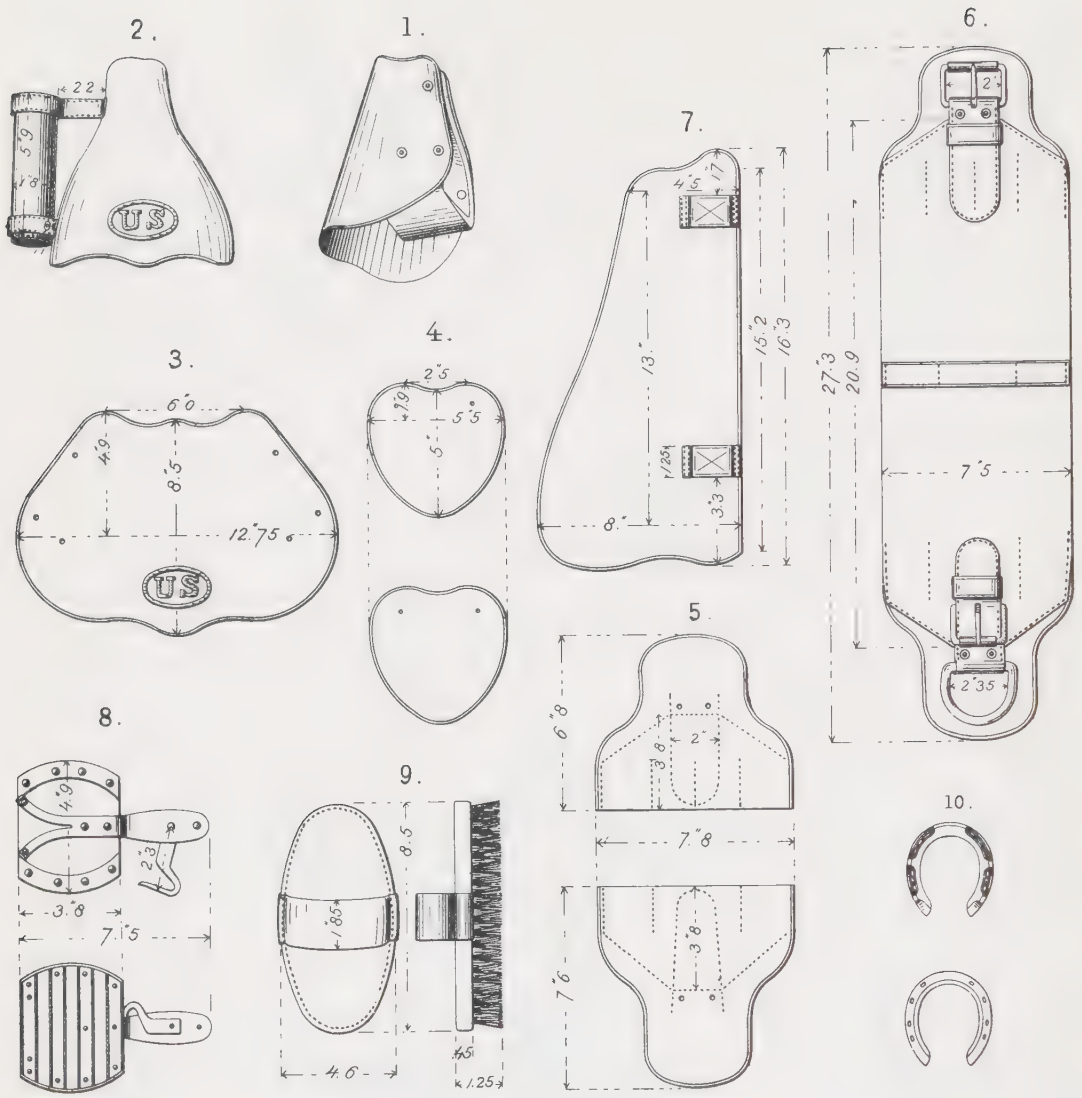


PLAN — [UNDER.]



SECTION ON CC′.

SECTION ON DD′.



1, STIRRUP.

2, STIRRUP WITH GUIDON SOCKET.

3, HOOD FOR STIRRUP.

4, SAFE FOR D-RING ON GIRTH STRAPS.

5, SAFE FOR GIRTH.

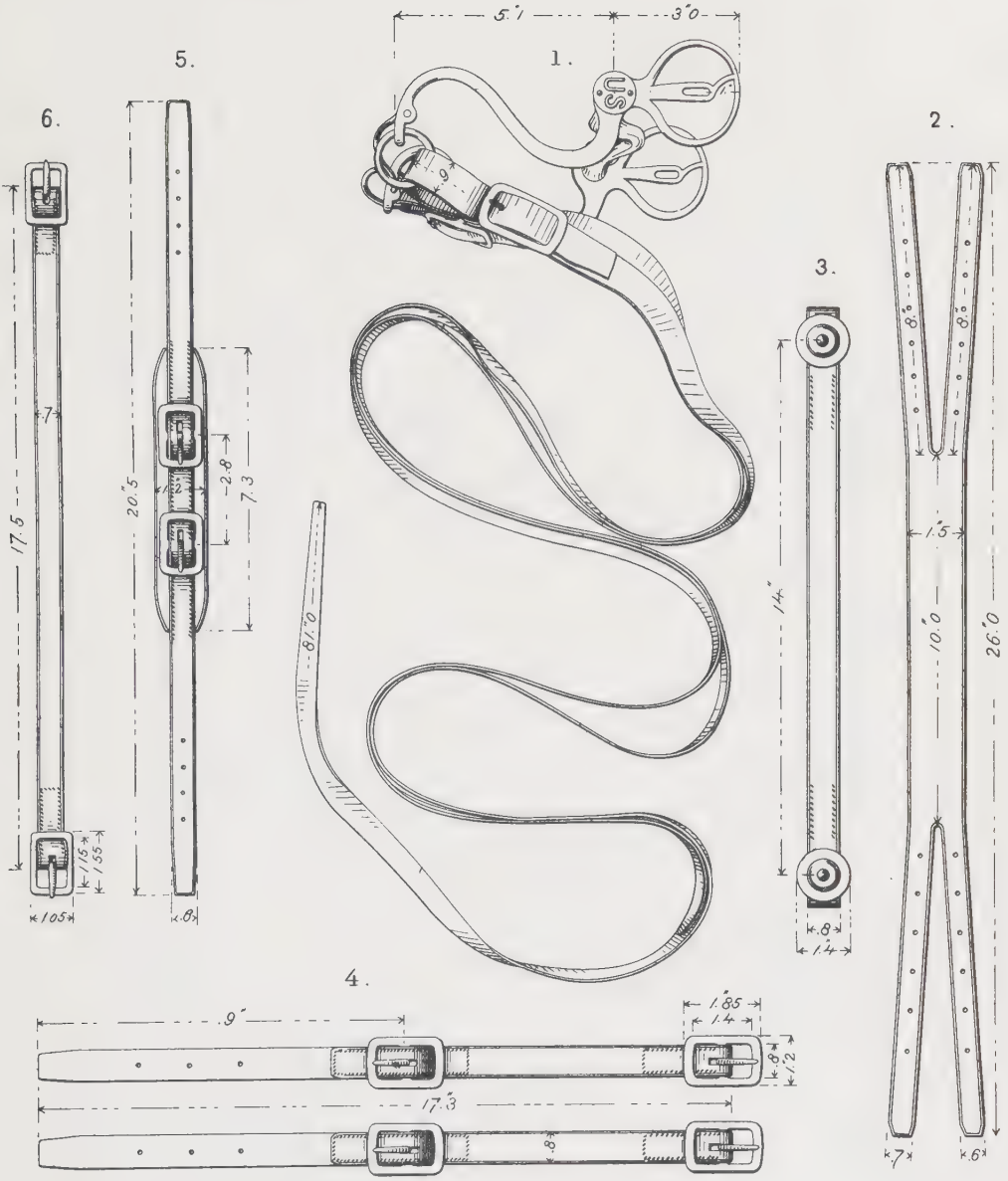
6, GIRTH.

7, SWEAT LEATHER.

8, CURRY COMB.

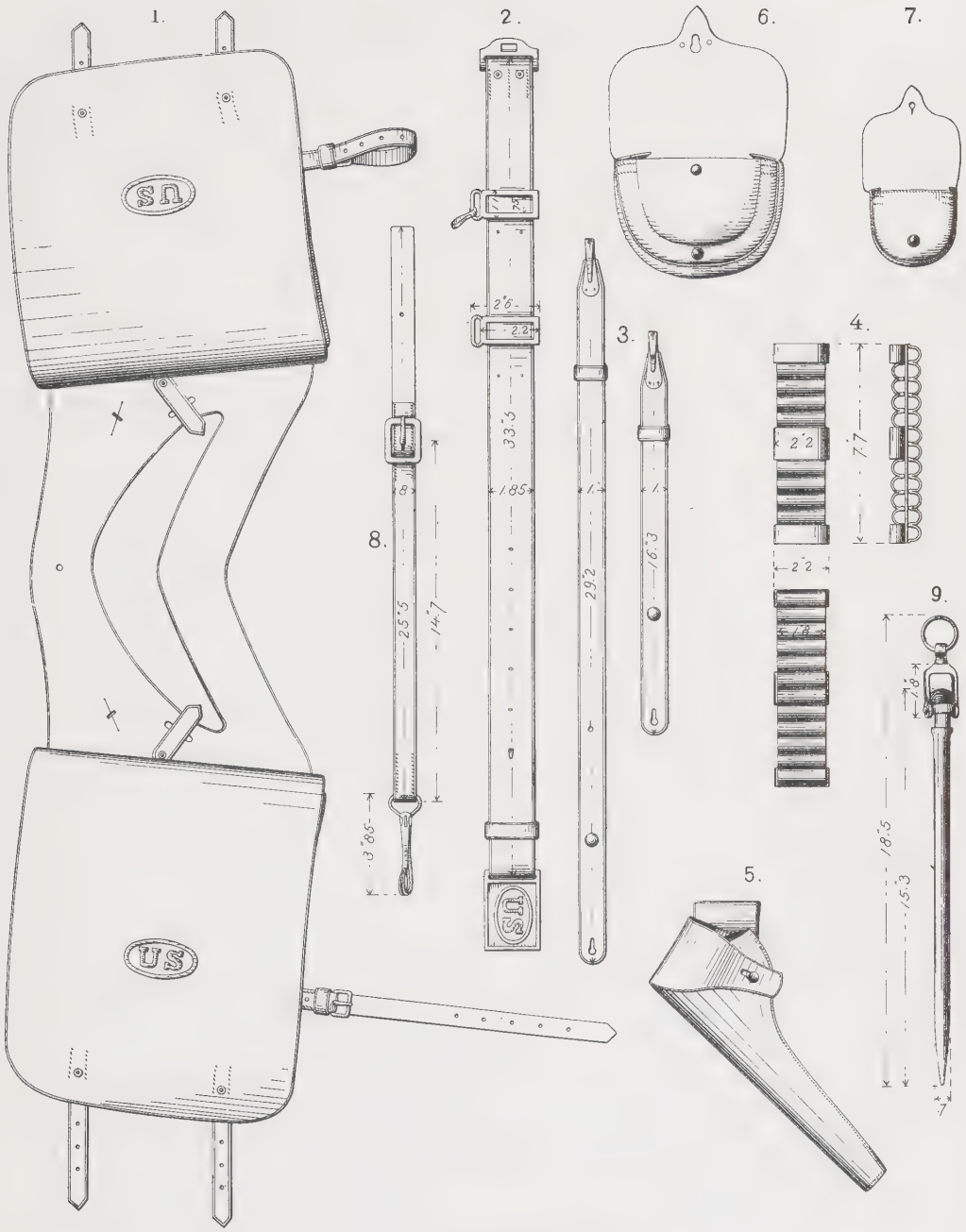
9, HORSE BRUSH.

10, HORSE SHOES.



CURB BRIDLE, IN DETAIL.

1, *Bit and Reins.*
2, *Crown-piece.*
3, *Brow-band.*
4, *Cheek-pieces.*
5, *Curb-strap.*
6, *Throat-lash.*



1, SADDLE BAGS.

2, BELT AND PLATE.

3, SABRE SLINGS.

4, MOVABLE CARTRIDGE LOOPS.

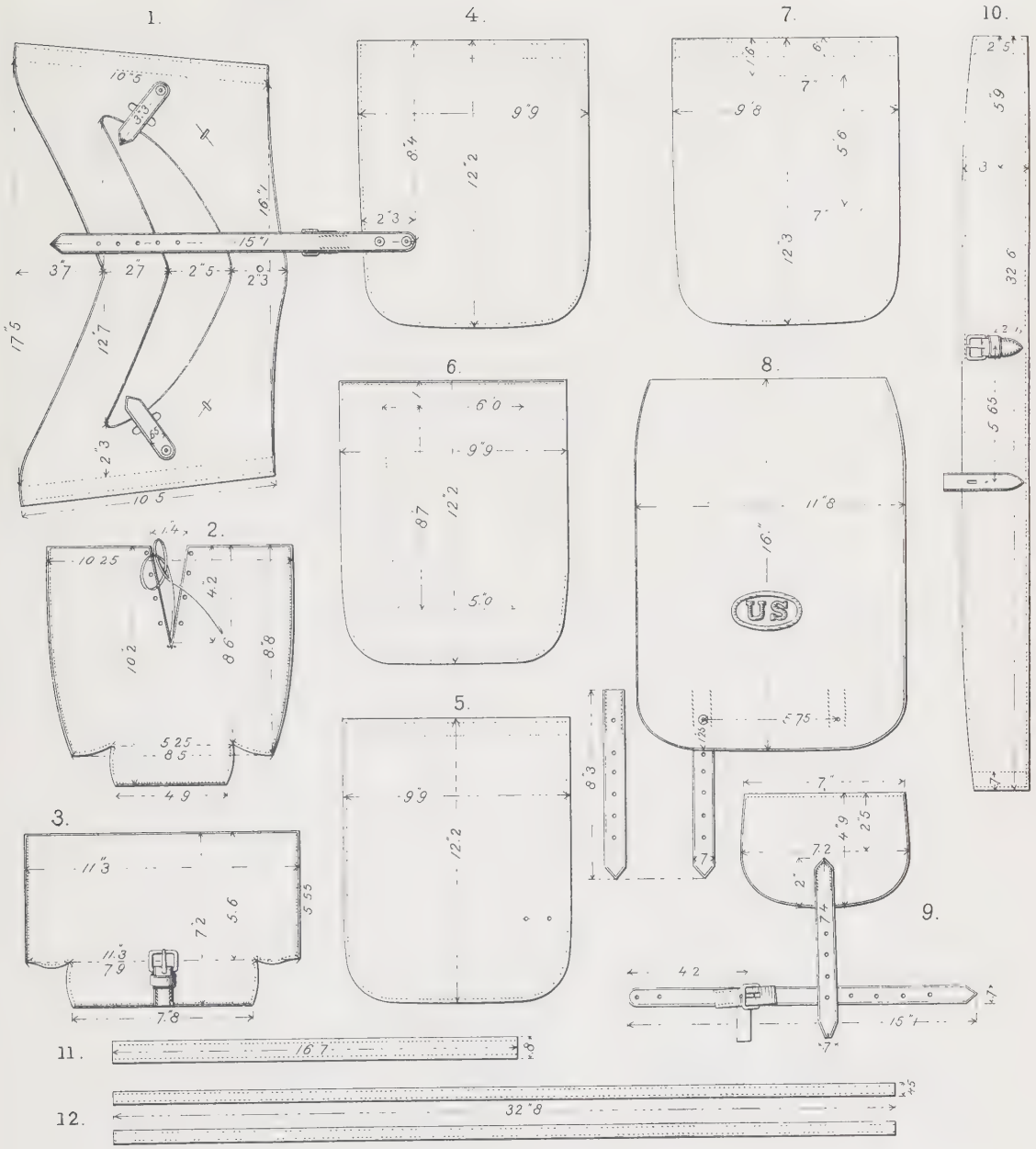
5, PISTOL HOLSTER.

6, CARBINE CARTRIDGE POUCH.

7, PISTOL CARTRIDGE POUCH.

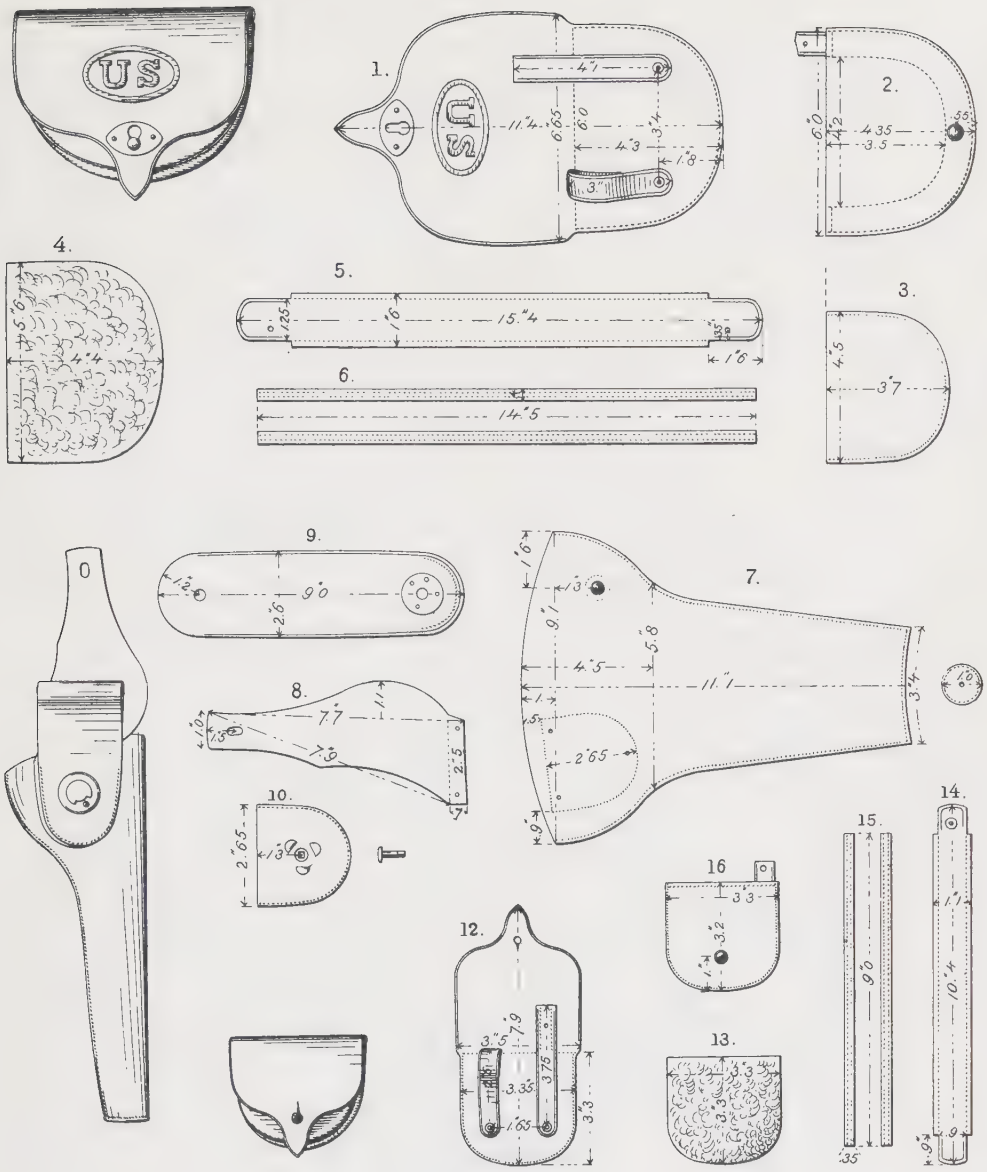
8, LINK.

9, PICKET PIN.



SADDLE BAGS, IN DETAIL.

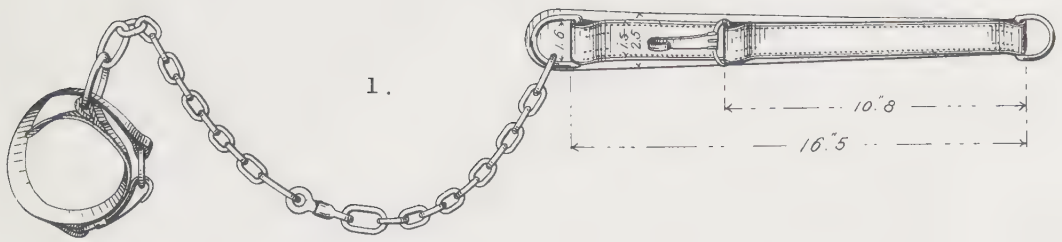
1, *Seat.*
2, *Brush and Comb Pocket.*
3, *Shoe and Nail Pocket.*
4, *Back, off side.*
5, *Back, near side.*
6, *Front, off side.*
7, *Front, near side.*
8, *Flap.*
9, *Flap S. and N. Pocket.*
10, *Gusset.*
11, *Reinforce.*
12, *Welts.*

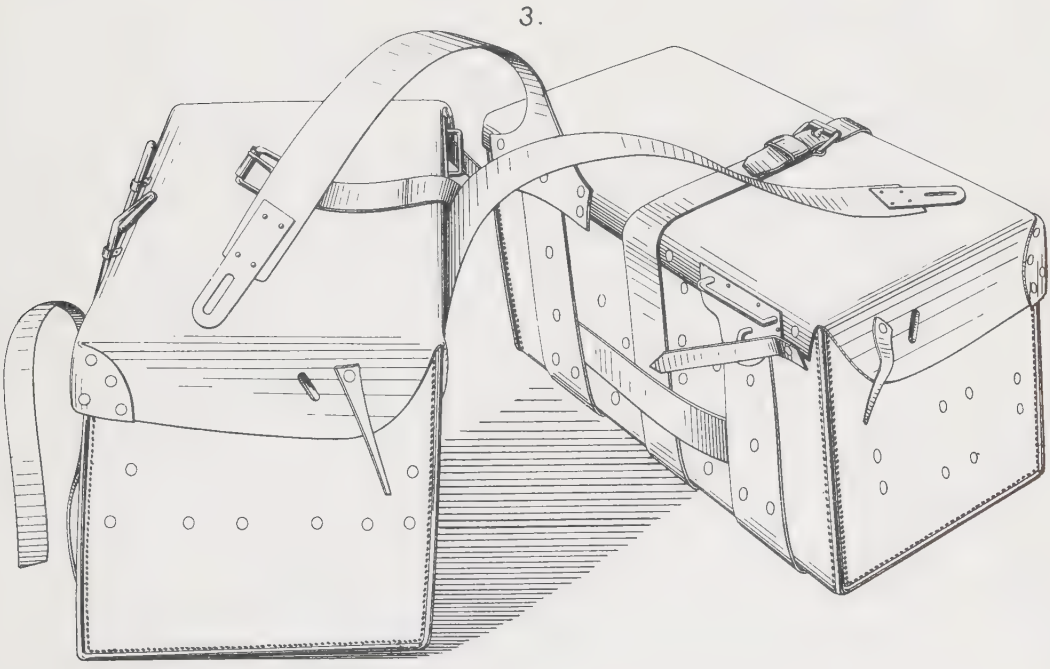


DETAILS OF

CARBINE CARTRIDGE POUCH, PISTOL HOLSTER & PISTOL CARTRIDGE POUCH

1, *Back and Flap.*
2, *Front.*
3, *Pocket.*
4, *Wool lining.*
5, *Gusset.*
6, *Wells.*
7, *Body.*
8, *Flap.*
9, *Frog.*
10, *Swivel attachment piece.*
12, *Back and Flap.*
13, *Wool lining.*
14, *Gusset.*
15, *Wells.*
16, *Front.*

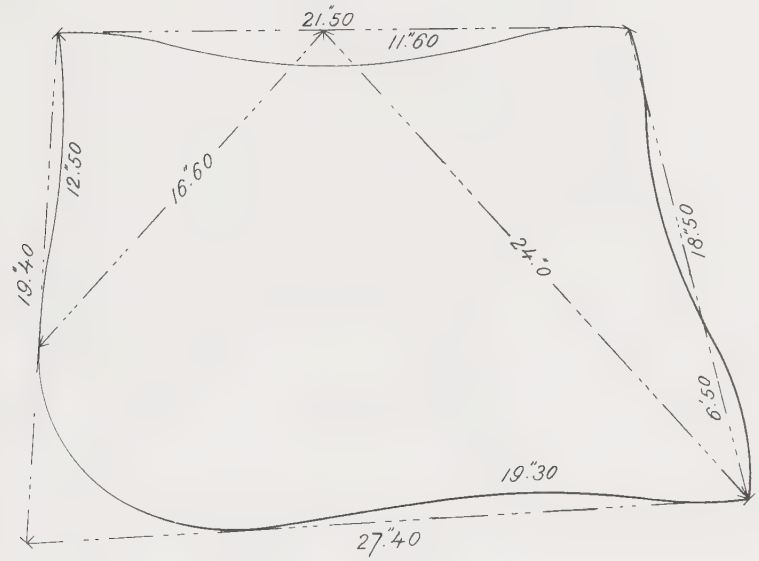




1, SIDE LINES.

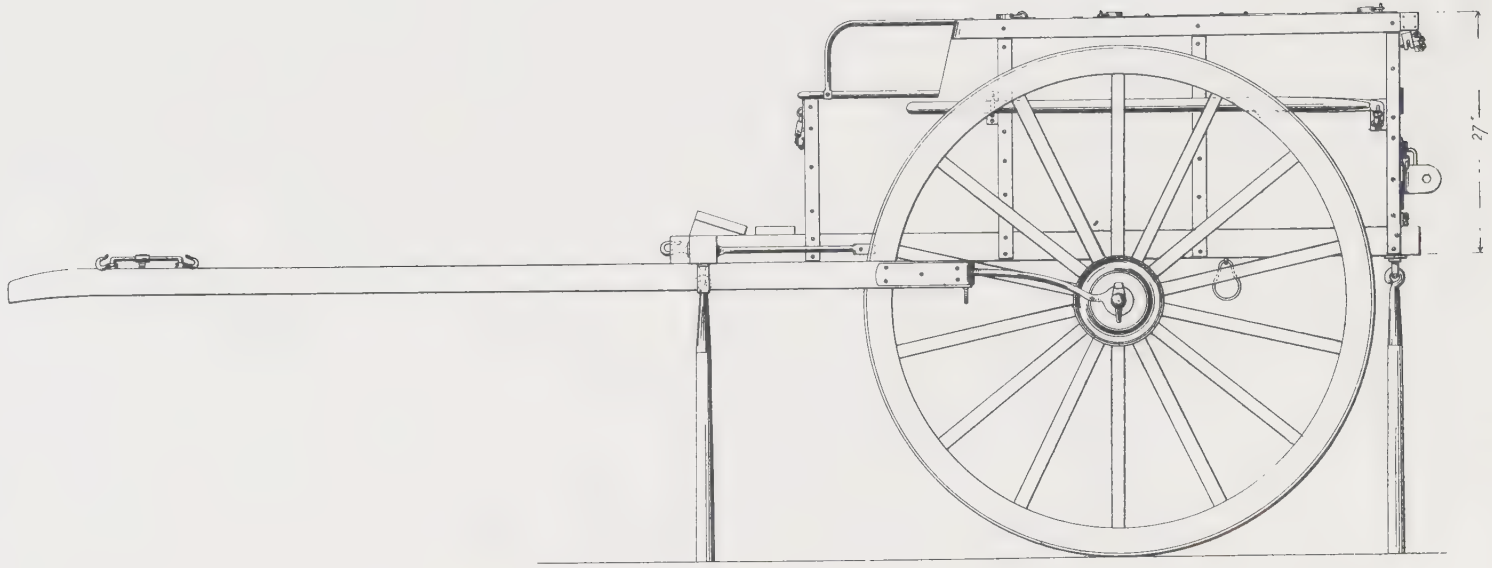
2, HALTER CHAIN.

3, TOOL BAGS



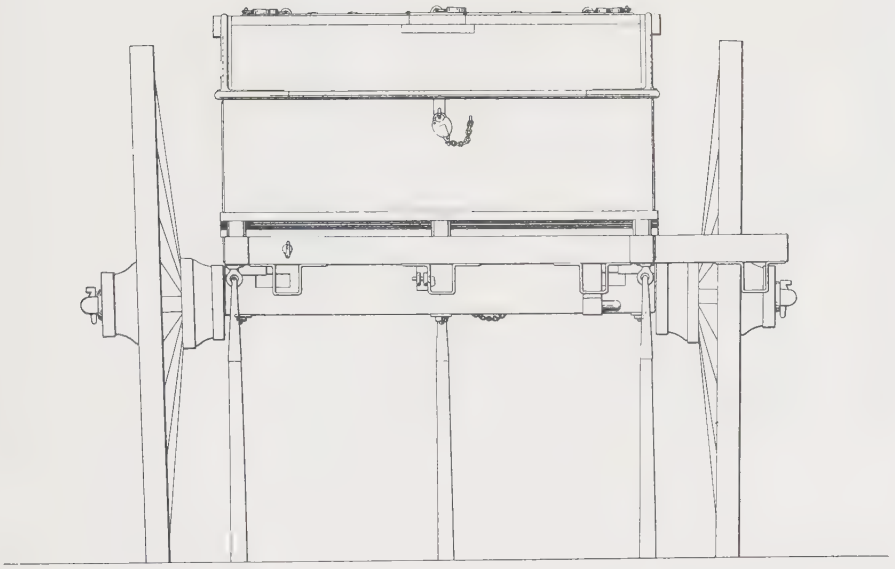
FELT SADDLE CLOTH.

CAVALRY FORGE CART.

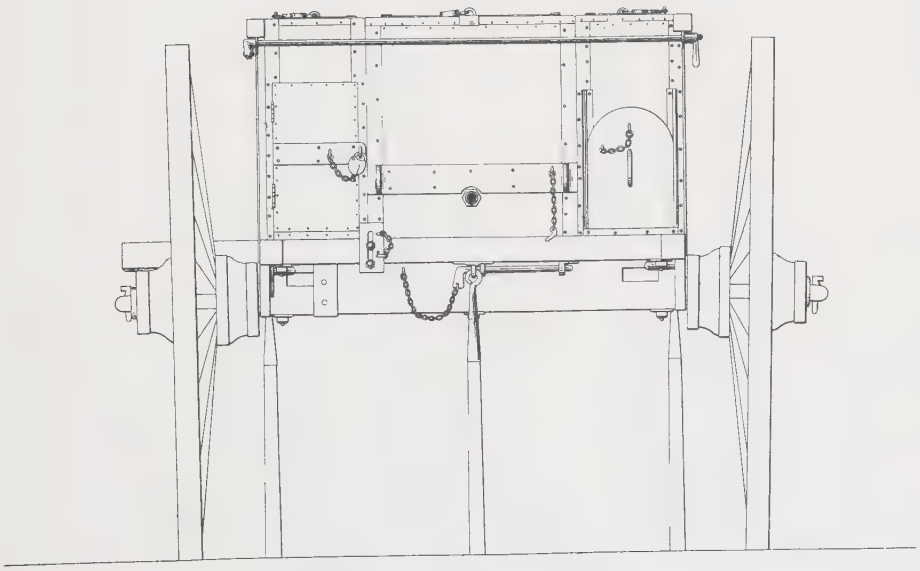


SIDE ELEVATION.

CAVALRY FORGE CART.

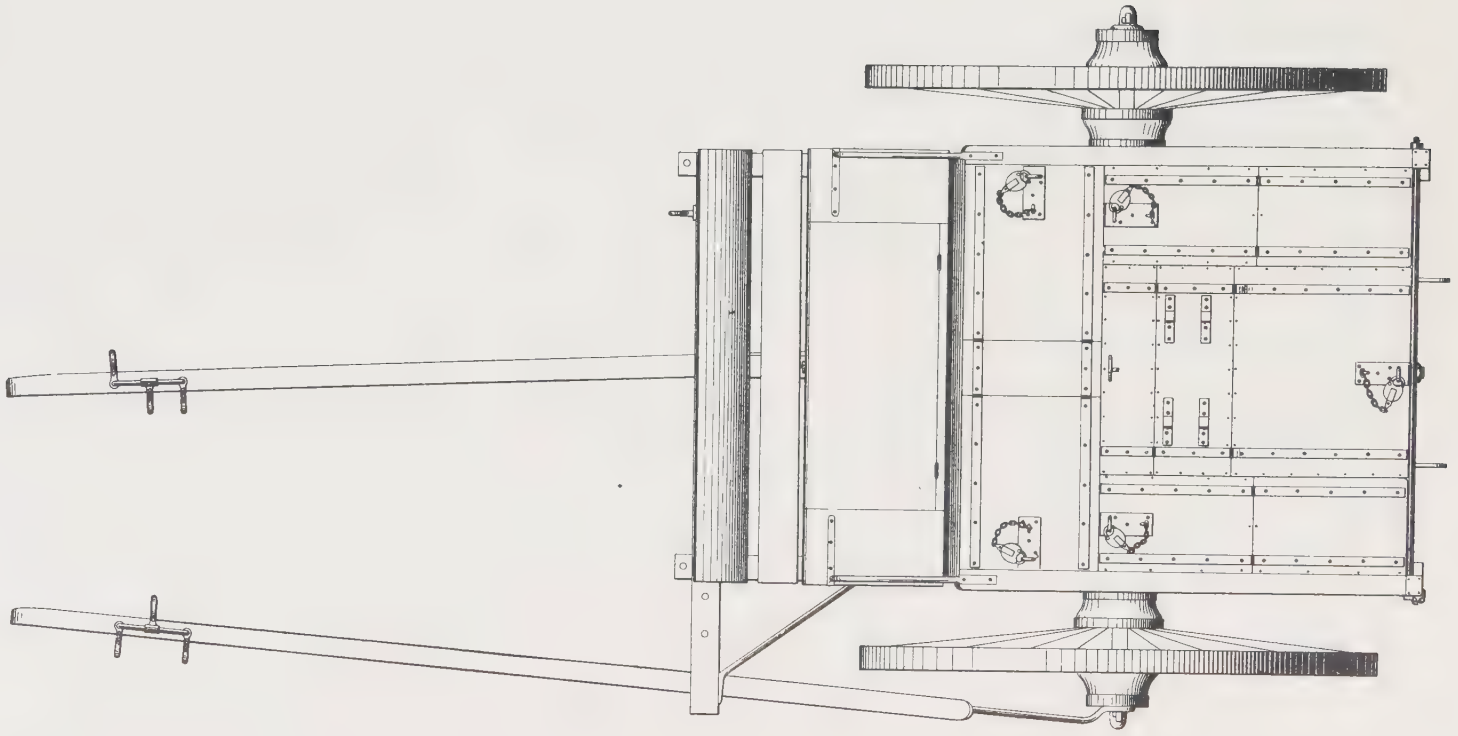


FRONT ELEVATION.



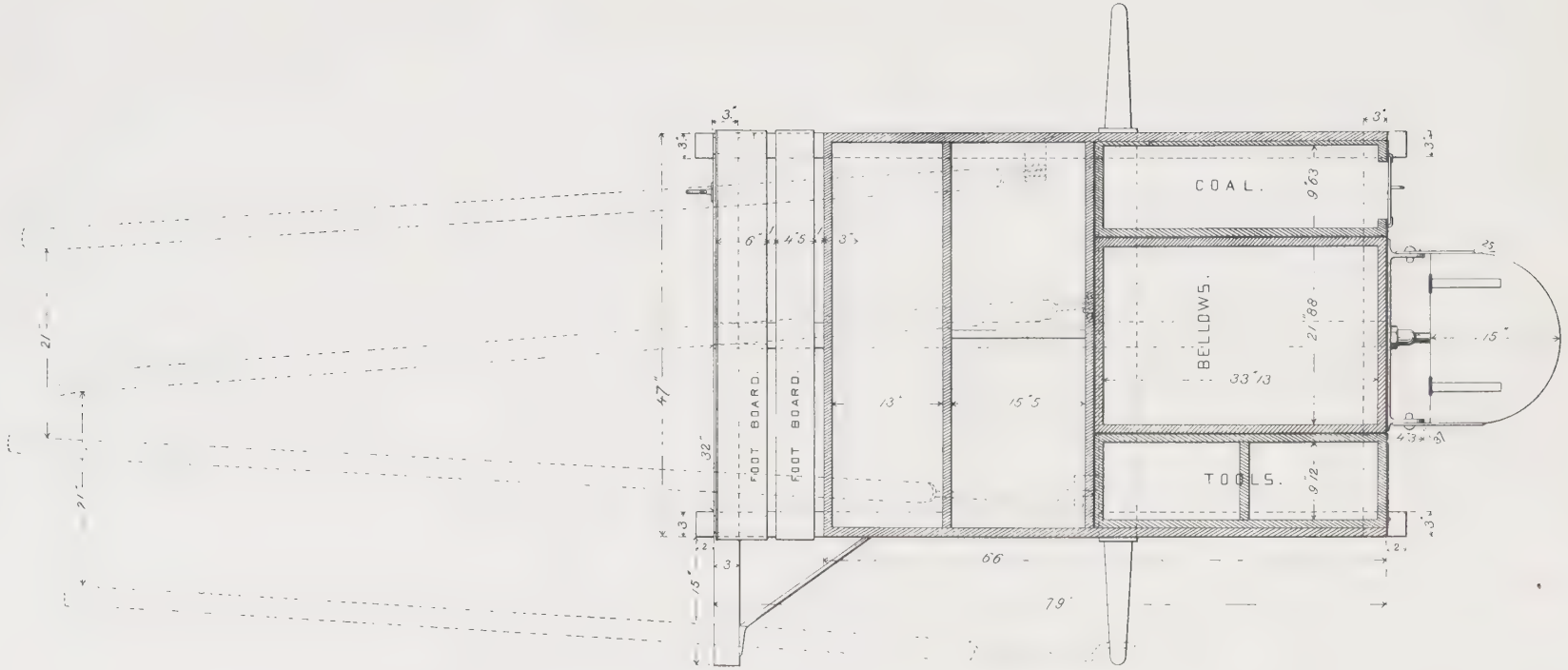
REAR ELEVATION.

CAVALRY FORGE CART.



PLAN.

CAVALRY FORGE CART.



HORIZONTAL SECTION.

[WITH FORGE IN POSITION.]

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